Youngstown 138 kV Reinforcement Project

Application to the Ohio Power Siting Board for a Certificate of Environmental Compatibility and Public Need

Prepared

for American Transmission Systems,

Incorporated,

a FirstEnergy Company

OPSB Case Number 24-0603-EL-BTX

August 2025

BEFORE THE OHIO POWER SITING BOARD

Certificate Application for Electric Transmission Facilities

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ACRONYMS AND ABBREVIATIONS

ATSI	American Transmission Systems, Incorporated
BMP	Best Management Practice
CAIDI	Customer Average Interruption Duration Index
CAUV	Current Agricultural Use Valuation
CFR	Code of Federal Regulations
DOE	Determination of Eligibility
DSM	Demand Side Management
ELF	Extremely Low Frequency
EMF	Electric and Magnetic Field
EPRI	Electric Power Research Institute
FAA	Federal Aviation Administration
FERC	Federal Energy Regulatory Commission
FirstEnergy	FirstEnergy Corp
HHEI	Headwater Habitat Evaluation Index
kV	Kilovolt
MSDS	Material Safety Data Sheet
MW	Megawatts
NA	Not Applicable
NERC	North American Electric Reliability Corporation
NESC	National Electrical Safety Code
NHL	National Historic Landmarks
NIEHS	National Institute of Environmental Health Sciences
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
NWP	Nationwide Permit
OAC	Ohio Administrative Code
OAI	Ohio Archaeological Inventory
OATT	Open Access Transmission Tariff
ODNR	Ohio Department of Natural Resources
ODNR-DOW	Ohio Department of Natural Resources - Division of Wildlife
ODOT	Ohio Department of Transportation
OEPA	Ohio Environmental Protection Agency
OHI	Ohio Historic Inventory
OHPO	Ohio Historic Preservation Office
OHWM	Ordinary High Water Mark
OPGW	Optical Ground Wire
OPSB	Ohio Power Siting Board
ORAM	Ohio Rapid Assessment Method
OSHA	Occupational Safety and Health Administration
PCN	Pre-Construction Notification
PEM	Palustrine Emergent
Penn Power	Pennsylvania Power Company
PFO	Palustrine Forested
PIM	Public Information Meeting
PJM	PJM Interconnection LLC
PSS	Palustrine Scrub-Shrub
PUCO	Public Utilities Commission of Ohio
Project	Youngstown 138kV Reinforcement Project

QHEI	Qualitative Habitat Evaluation Index
RAPID	Research and Public Information Dissemination
RFI	Radio frequency interference
ROW	Right-of-Way
RSS	Route Selection Study
RTEP	Regional Transmission Expansion Plan
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SDS	Safety Datasheet
SHPO	State Historic Preservation Office
SWPPP	Stormwater Pollution Prevention Plan
TVI	Television Interference
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

4906-4-02 PROJECT SUMMARY AND APPLICANT INFORMATION

American Transmission Systems, Incorporated (ATSI), a FirstEnergy company, plans to construct a new 138 kilovolt (kV) transmission line in Mahoning County, Ohio. Route alternatives under consideration traverse the City of Youngstown and a portion of the City of Campbell. The new transmission line will connect the Lincoln Park Substation to the Riverbend Substation. The proposed work will convert the 138 kV straight bus at Riverbend Substation to a 4-breaker ring bus as well as accommodate a new 138 kV line terminal at Lincoln Park Substation, and both of these upgrades will occur within the existing substation fence line.

(A) General Purpose of the Facility

The purpose of the proposed Youngstown 138 kV Reinforcement Project ("Project") is to improve reliability of the transmission and sub-transmission systems in the Youngstown and surrounding area to strengthen the transmission system under numerous planning contingencies and to improve overall efficiency and flexibility in the operation of the transmission system in Mahoning County, Ohio. Currently, loss of the Riverbend-Salt Springs 138 kV Transmission Line followed by the loss of the Riverbend-Wickliffe 138 kV Transmission Line removes both 138 kV sources into the Riverbend Substation. Because there is no source into the Riverbend Substation after the contingencies, the radial 23 kV customers will lose power. Similarly, loss of the Lincoln Park-Masury 138 kV Transmission Line followed by the loss of the Lincoln Park-Lowellville 138 kV Transmission Line results in potential local voltage collapse of the Lincoln Park area 23 kV system, resulting in customer outages. The proposed Project is the least impactful option to resolve voltage drops, increase service demand, and provide for future system capacity. The Project will support economic development in the area and will allow ATSI to improve electric transmission service reliability by providing increased redundancy and operating flexibility.

Additional details can be found in the Application's Review of Need and Schedule, in Section 4906-4-03(C).

(B) General Location, Size, and Operating Characteristics

The proposed Project will be located in northeast Mahoning County. The Project begins at the existing Lincoln Park Substation, trends southeast then northeast until the line terminates at the Riverbend Substation. The Project, as proposed, is a single-circuit transmission line primarily supported on steel monopoles requiring a 65-foot-wide permanent right-of-way (ROW). The transmission line will be approximately 6.25 miles in length.

(C) Suitability of Proposed Route

ATSI identified a Proposed after conducting a Route Selection Study (RSS), which is included as **Appendix 4-1**. The RSS provides details on the selection process utilized by ATSI to identify the Proposed Route proposed in this Application. A detailed discussion of the RSS and selected route is found in **Section 4906-4-04** of this Application.

In general, the RSS process is an iterative and incremental process that starts with the identification of reasonable routes given the Project need and overall Project area considerations that are evaluated by the siting team. Possible routes for review and consideration were initially selected based on the avoidance or minimization of impacts to known sensitive land uses, ecological features, and cultural resources where identification was possible from existing resources. Potential routes were then evaluated, compared, and ranked for further evaluation. Based on initial segment analysis, 65 segments were refined, removed, and adjusted to form 35 viable segments that were combined to form a total of 36 candidate routes. To reduce the number of candidate routes to a focused set of alignments, the quantitative results from the segment analysis were combined to predict the top 10 scoring routes of the 36 potential candidate route alternatives and were ranked first by individual category (i.e. land use, ecological, cultural,), then overall score. The segments of these top 10 routes were combined into full candidate routes and quantitatively re-evaluated to finalizing the overall scoring for these routes to identify the Proposed Route for this Project.

For purposes of identifying the Proposed Route presented in this Application, the siting team considered all of the factors included in the RSS, with a particular emphasis on route alternatives that minimized land use, environmental, constructability, and other socioeconomic impacts. ATSI also took into account other land-use considerations, where possible, to further reduce impacts to parks and other sensitive resources.

The Proposed Route is identified in the RSS as Route 25 (1-1B-2-12-22-26-36-39-40-48-49-54-55-59). The Proposed Route is approximately 6.25 miles in length. Both the alternative and Proposed route utilize the common route segments as detailed in Section 4906-4-02 (C)(iii), below. In contrast with the alternative route, the Proposed route utilizes Segment 59, identified as the Ohio Department of Transportation (ODOT) alternative, to avoid placement of the route along a residential corridor associated with Woodland Avenue (Segments 12A, 15, 17, 20, and 20A). The Proposed Route also differs from the Alternative Route by utilizing a more southerly Mahoning River crossing (Segments 26, 39, and 40) to avoid Lincoln Park and church property. Utilizing the southern option for the Mahoning River crossing allows avoidance of a sensitive area of worship as well as Lincoln Park.

(D) Applicant History Description and Affiliate Relationships

ATSI is a wholly owned subsidiary of FirstEnergy Transmission, LLC, which is a wholly-owned subsidiary of FirstEnergy Corp. (“FirstEnergy”). ATSI’s assets are comprised, in large part, of the transmission assets formerly owned by the operating utilities of FirstEnergy in western Pennsylvania and Ohio (i.e., Pennsylvania Power Company (“Penn Power”) in western

Pennsylvania, and Ohio Edison Company, The Cleveland Electric Illuminating Company and The Toledo Edison Company in Ohio). ATSI commenced the provision of a Federal Energy Regulatory Commission (FERC) jurisdictional interstate transmission service in Ohio on September 1, 2000, following approval from the Public Utilities Commission of Ohio (PUCO) to transfer transmission assets from the FirstEnergy Ohio operating companies to ATSI.

FirstEnergy was formed in 1997 through the merger of Ohio Edison Company and Centerior Energy Corporation. Through this merger, FirstEnergy became the holding company for Ohio Edison and its Pennsylvania Power Company subsidiary, as well as The Cleveland Electric Illuminating Company and The Toledo Edison Company. At that time, FirstEnergy served 2.2 million customers within 13,200 square miles of northern and central Ohio and western Pennsylvania and had approximately 12,000 megawatts (MW) of generating capacity.(FirstEnergy, 2025).[1]

In 2001, FirstEnergy nearly doubled its customers to more than 4.3 million when it merged with the former GPU, Inc., based in Morristown, New Jersey. GPU served 2.1 million customers in a 24,000 square-mile service area in Pennsylvania and New Jersey through its three operating companies: Metropolitan Edison Company, Pennsylvania Electric Company, and Jersey Central Power & Light Company. (FirstEnergy, 2025)[1].

In 2011, FirstEnergy completed a merger with Allegheny Energy, a Greensburg, Pennsylvania based company that served 1.6 million customers in Pennsylvania, West Virginia, Maryland and Virginia. The merger provided opportunities for FirstEnergy to grow and expand into new markets with a stronger, more focused competitive operation. (FirstEnergy, 2025)[1].

Today, FirstEnergy is one of the nation's largest investor-owned electric systems serving 6 million customers within a service territory of 65,000 square miles and six states. (FirstEnergy, 2025)[2]

ATSI is a transmission-only company that provides transmission services in the western portion of Pennsylvania and in the state of Ohio. Currently, ATSI owns and maintains over 8,100 circuit-miles of transmission lines, substations and other transmission facilities that are located primarily in the ATSI Zone of PJM Interconnection, LLC (PJM), which is the regional transmission organization for the area. ATSI also owns certain limited transmission facilities outside of its zone that are necessary to tie ATSI's transmission system into the transmission and generation facilities in neighboring utilities' territories or otherwise necessary to support transmission service in ATSI's zone. ATSI's transmission facilities are under the operational control of PJM.

(E) Not Applicable for Electric Transmission Line Activities.

[1] FirstEnergy. 2025. Company History Available online at https://www.firstenergycorp.com/about/company_history.html

4906-4-03 PROJECT DESCRIPTION

(A)(1) Project Schedule

Construction of the Project is anticipated to begin in November 2027, with an anticipated in-service date of December 2028. The current Project schedule, including all major activities and milestones, is illustrated in a Gantt schedule bar chart shown in **Figure 3-1**.

(A)(2) Construction Sequence

The first sequence of construction is to clear any necessary vegetation. The first vegetation clearing will begin at the eastern end of the project and move west. Once any necessary vegetation is cleared, access roads will be installed where necessary. This will consist of timber matted access roads in sensitive areas and stoned roads in non-sensitive areas. Construction of the transmission line will follow starting on the east end and moving west. The project will be placed in service in December 2028 in conjunction with the Project's restoration.

(A)(3) Project Area Description

(A)(3)(a): Figure 3-2 provides an overview project area map at 1:24,000-scale, showing the Proposed Route for the Project. This map includes a 1,000-foot corridor on each side of the proposed transmission centerlines (hereafter referred to as the 2,000-foot corridor). This map depicts the proposed transmission line, roads and railroads, major institutions, parks, and recreational areas that are publicly identified and publicly owned, existing gas pipeline and electric transmission line corridors, named lakes, reservoirs, streams, canals, rivers, population centers, legal boundaries of cities, villages, townships, counties, sensitive receptors, and the area in acres of the proposed ROW. The map utilizes the Campbell (1980) and Youngstown (1985) U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles as a base map.

The information on the map was updated by reviewing digital, georeferenced aerial photography, property parcel data from the Mahoning County Auditor's Office, and field reconnaissance conducted from the Fall of 2023 to Summer of 2024. The aerial photographs are georeferenced, ortho-corrected color images derived from ESRI® ArcGIS Online.

The proposed permanent ROW width is 65 feet, with 32.5 feet on either side of the centerline of the Proposed Route. **Table 3-1** provides the Proposed Route's ROW acreage, length, and properties crossed based on the proposed centerline.

Table 3-1

Right-of-way Area, Length, and Number of Properties Crossed for the Proposed Route

Proposed Route Characteristic	Value
Proposed ROW area (in acres)	49.2
Length (in miles)	6.25
Number of properties crossed (by ROW)	108

(A)(4) Proposed Facility Layout and Installation

(A)(4)(a): The following describes the proposed site clearing, construction methods, and reclamation operations for the Project.

(A)(4)(a)(i): The transmission line will be surveyed to establish the centerline location. The surveying will be completed using conventional and/or aerial methods. The location of significant topographic features and man-made structures along or near the centerline of the transmission line that may affect the design of the transmission line will be identified during the survey. Some minimal clearing of small trees and brush may be required if the surveyor's line of sight is obstructed. Offsets will be used to survey around large trees and other large obstructions. Profile measurements will also be obtained by conventional or aerial methods. Structure locations will be staked prior to construction.

Soil and/or rock tests will be performed along portions of the final approved route for foundations for poles based on final engineering design. In the steel structures on concrete foundations locations, geotechnical soil testing using truck-mounted drilling equipment will be utilized. Soil tests will be performed using a drop hammer to drive a sampler tube. Soil bearing capacity is tested by the number of blows required to drive the tube 12 inches into the ground. Soil samples taken with a split-spoon at 5-foot intervals will be used to determine soil type. Typically, the testing will be performed to a depth of between 20 to 40 feet. If rock is encountered, a carbide-tipped bit will be used to drill an exploratory boring 5 to 10 feet into the rock.

(A)(4)(a)(ii): No significant grading is anticipated to construct the transmission line. The existing terrain within the Proposed Route's ROW generally provides a suitable surface for construction vehicle operation. Some minor, local leveling may be necessary for designated laydown and set-up areas for construction equipment; however, any grading would be restricted to the immediate area.

The majority of the transmission line construction will be comprised of the installation of steel poles on concrete foundations that will require a machine-drilled hole for placement of the pole foundation. The excavation for each concrete foundation will be approximately 10 feet in diameter and approximately 35 feet deep. A portion of the excavated soil will be used for backfill around the foundation, and the excess soil material will be placed around the pole or hauled offsite to an appropriate spoils disposal site.

In addition to the use of steel poles on concrete foundations, direct embed wood pole equivalent steel structures will be used. Each wood pole equivalent steel structure installation requires a machine-drilled hole for placement of the structure. The excavation for these poles will average 3 feet in diameter and 9 to 17 feet deep. A portion of the excavated soil will be used for backfill. The excess material will be placed around the structure or hauled offsite to an approved spoils disposal facility.

(A)(4)(a)(iii): Construction access will be required for the stringing of the conductor cable or wire and installation of the structures. Access roads will require landowner's input and approval. Preliminary access roads for the Proposed Route will occur from existing public roads in close

proximity to, or crossed by, the transmission line ROW.

Proposed access roads are identified in **Figure 3-3**. The location of these access roads cannot be finalized until after the route is approved and Applicant's discussion with affected landowners. Where access across wetlands or streams is necessary, construction matting or equivalent will be used to minimize disturbance. If field conditions necessitate the modification of the finalized access road locations during construction, the concurrence of the property owner will be obtained, necessary environmental field studies will be performed, and necessary permits will be updated.

(A)(4)(a)(iv): Conductor installation for the proposed line will be accomplished using the tension stringing method. Lightweight guy cables or ropes will be fed through the stringing sheaves of the sections of line that require stringing. Conductors will then be pulled through under sufficient tension to keep the conductor off the ground. This protects the conductor from surface damage.

Temporary guard or clearance poles will be used as a safety precaution at locations where the conductors could create a hazard to either crew members or the general public. The locations and heights of clearance poles will be such that the conductors are held clear of power and communication circuits, vehicular traffic, and other structures. The stringing operation will be under the observation of crew members at all times. The observers will be in radio and/or visual contact with the operator of the stringing equipment.

(A)(4)(a)(v): The Project will be constructed using steel monopoles with concrete foundations and direct embed wood pole equivalent steel poles.

(A)(4)(a)(vi): After construction is complete, the Project workspace will be restored to conditions as good as those that existed prior to construction. This includes the restoration of drainage ditches, repair or replacement of any pre-existing or damaged fencing or field drainage tiles (or damage thereto), the seeding and mulching of disturbed non-cultivated areas; and the removal of temporary soil erosion and sedimentation control measures after vegetative cover has been established. Disturbed areas adjacent to streams and wetlands will be revegetated using methods to minimize soil erosion and degradation.

Lawn or garden areas, or paved areas damaged during the construction of the transmission line, will be restored to original condition. Landscaping or landscape plantings damaged during construction will also be restored to original condition or replaced to the extent possible and practical as requested by the affected property owner.

Temporary and permanent seeding will be coordinated with construction activities to provide re-vegetation and soil stabilization at the earliest reasonable time. Following construction, all pole locations, material storage sites, and temporary access roads will be restored and seeded with a suitable grass seed mixture that will be specified in the erosion and sediment control plan.

(A)(4)(b): No new associated facilities such as new substations or substation expansions are proposed for the Project.

(A)(4)(b)(i): Figure 3-3 shows an overview index map at 1:12,000-scale of the Proposed Route and more detailed maps at 1:2,400-scale. These maps contain the data and information required by

Adm.Code 4906-4-03 (A)(4)(b)(i)(*a*)(*b*)(*c*), including temporary access roads and proposed locations of transmission line poles and buildings. All access roads for this Project are proposed temporary and no permanent access roads are anticipated to be required. Staging areas and laydowns are not identified at this time.

No fenced-in or secured areas are planned for the Project.

(A)(4)(b)(ii): A detailed description of the reasons for the proposed layout (i.e. the Proposed and Alternate Routes) are presented in the RSS (**Appendix 4-1**). There are no unusual features within the Project Study Area.

(A)(4)(b)(iii): Except as otherwise described in this Application, ATSI currently has no specific plans for future modifications of the proposed Project.

(B) Proposed Electric Generation Facility

This code provision relates to electric generation facility projects and is therefore not applicable to this Project.

(C) Proposed Electric Transmission Line

(C)(1)(a): This Project is needed to provide both the Lincoln Park and Riverbend Substations with an additional 138 kV source in order to mitigate impacts caused by damage or other problems affecting shared structures. Additionally, this Project enables maintenance to be performed without necessitating concomitant outages. This Project makes improvements to the reliability and operational flexibility of the transmission system in the Project Study Area, strengthens the transmission system under certain planning contingencies, and increases the resiliency and efficiency of the operation of the transmission system in the Youngstown, Ohio area.

The Project consists of two primary components necessary to achieve the system improvements. These upgrades are:

1. Converting the Riverbend Substation from a 138 kV straight bus configuration to a four-breaker ring bus configuration by installing two 138 kV breakers.
2. Constructing a new 138 kV transmission line to connect the Riverbend Substation to the Lincoln Park Substation.

Implementation of these upgrades is necessary to achieve the system improvements. More specifically, the Project is needed to reinforce the 138 kV Transmission System on the FE/ATSI system in the Project Study Area to continue to provide safe and reliable electric service and to provide capacity for economic development and load growth in the area.

The Project Study Area was originally evaluated in 2018 using a current model of the transmission system and was re-evaluated in 2024 using the PJM 2023 Regional Transmission Expansion Plan (RTEP) power flow case, which incorporates the most recent system configuration changes and an updated load forecast for the year 2028. In both evaluations it was identified the Project Study Area will continue to be subject to the potential of load loss under certain contingency situations (see

Table 3-2 for specific contingency definitions). As such, and as previously documented in OPSB Case No. 19-1871-EL-BTX Staff Report of Investigation, this Project is needed.

ATSI's 138 kV transmission system in and near the Project Study Area is an integral part of the regional transmission grid; through the Lincoln Park, Wickliffe, and Riverbend substations, ATSI provides electric service to customers within the Youngstown and surrounding area.

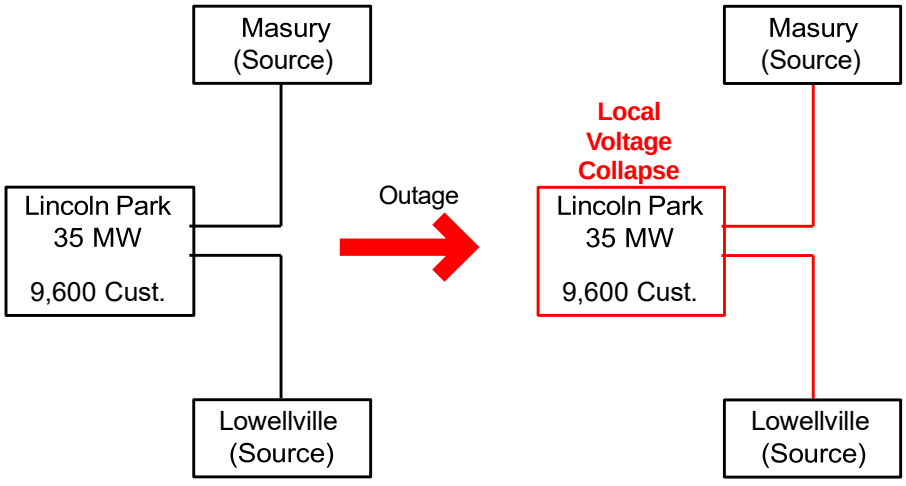
This Project was selected as part of the FERC's regional transmission planning process; it is the best solution for similar issues affecting both the Lincoln Park Substation and the Riverbend Substation.

As explained in this Section of the Application, when compared to other alternatives, the proposed Project is the best option to enhance the reliability, resiliency, efficiency, and operational flexibility of the transmission and sub-transmission systems in the Youngstown area. Construction of the Project will directly improve electric service for approximately 26,600 customers served by the transmission system in the Project area and provide additional capacity for economic development and load growth in the area.

Construction of a new 138 kV transmission line was selected over other alternatives because it is the most effective solution to address the load and customer risk for certain contingency situations while also providing additional capacity.

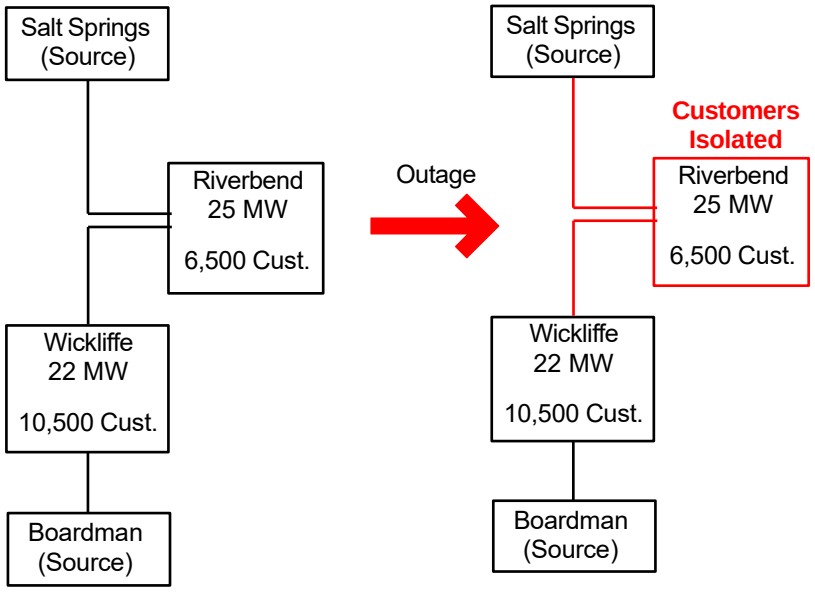
Approximately 9,600 customers and 35 MW of load are vulnerable to complete outages due to the existing configuration of the two 138 kV transmission lines (Lincoln Park-Masury and Lincoln Park- Lowellville) that presently serve the Lincoln Park 138 kV Substation. As constructed, the Lincoln Park- Masury and Lincoln Park-Lowellville transmission lines are a double circuit and share twenty-one (21) common structures (equating to roughly three miles in distance); there is no other transmission line connected to the Lincoln Park Substation (see **Figure 3-4**). Consequently, the failure of any such shared structures would result in a cessation of power to the Lincoln Park Substation and a lengthy outage for the customers served by the substation.

Figure 3-4: General Representation of Lincoln Park Outage Addressed by Project



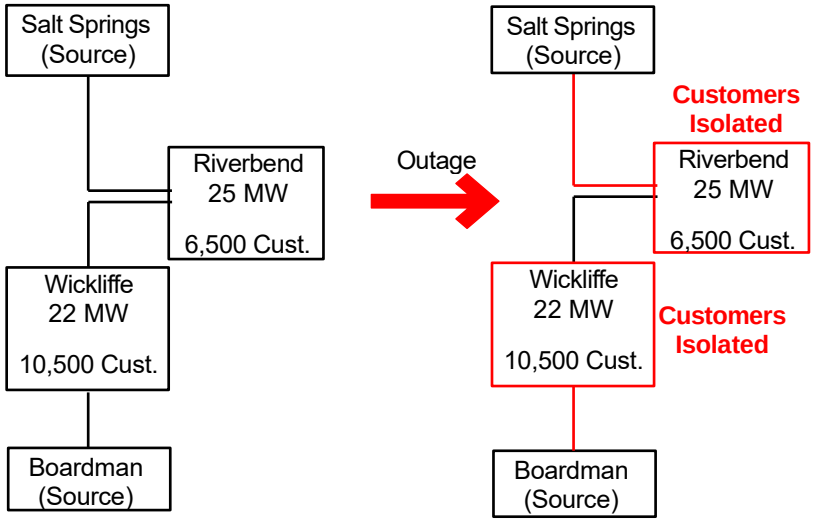
Similarly, the Riverbend 138 kV Substation serves approximately 6,500 customers (25 MW of load) is served from two 138 kV sources: the Riverbend-Salt Springs 138 kV Transmission Line and the Riverbend-Wickliffe 138 kV Transmission Line (see **Figure 3-5**). These two 138 kV lines are constructed as a double circuit and share common structures for roughly 3.4 miles (47 structures). Failure of any one of these structures would result in a lengthy outage of both 138 kV sources. An outage of both 138 kV sources serving the Riverbend Substation results in approximately 6,500 customers and 25 MW of load being interrupted.

Figure 3-5: **General Representation of Riverbend Outage Addressed by Project**



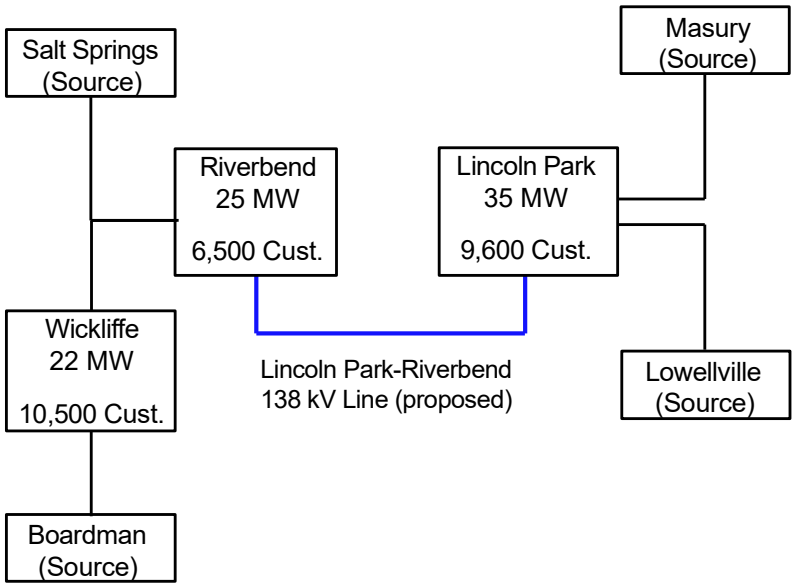
Additionally, the Riverbend and Wickliffe 138 kV substations are also served from two 138 kV sources, the Riverbend-Salt Springs and Boardman-Wickliffe 138 kV Transmission Lines. As presented in **Figure 3-6**, the Boardman-Wickliffe 138 kV Transmission Line serves the Riverbend Substation through the Wickliffe Substation. As a result of this configuration, outage of both 138 kV sources serving the Riverbend/Wickliffe area results in approximately 17,000 customers and 47 MW of load being interrupted.

Figure 3-6: **General Representation of Riverbend/Wickliffe Outage Addressed by Project**



By constructing the new 138 kV transmission line proposed in this Project, a third 138 kV source will be provided to both the Lincoln Park area and Riverbend/Wickliffe area, which significantly increases reliability, resiliency, and operational flexibility in the entire Project Area (see **Figure 3-7**).

Figure 3-7: **General Representation of the Project Area Following Construction of Lincoln Park- Riverbend 138 kV Transmission Line**



Additionally, the proposed Project will strengthen the Project Study Area by providing additional system capacity to enable economic development opportunities and provide operational flexibility for maintenance and storm restoration activities.

Overall, the Project will provide the following benefits to the Project Area's transmission system and its customers. The Project will:

1. Address potential customer outages caused by the loss of any of the transmission structures shared by both 138 kV sources into the Lincoln Park Substation (approximately 9,600 customers affected).
2. Address potential customer outages caused by the loss of any of the transmission structures shared by both 138 kV sources into the Riverbend Substation (approximately 6,500 customers affected).
3. Address potential customer outages caused by the loss of both 138 kV sources into the Riverbend/Wickliffe area (approximately 17,000 customers affected).
4. Strengthen the Project Area Transmission System to support future growth in load demand in the Project Study Area.

(C)(1)((b): The ATSI transmission system in the Project Area is supported by two 138-23 kV substations (Lincoln Park and Riverbend) as well as one 138-22.86 kV distribution substation (Wickliffe). The 138-23 kV Lincoln Park Substation is only fed by two 138 kV transmission lines (which share numerous structures). The entire area served by the combination of the Riverbend and Wickliffe substations is also served by only two 138 kV transmission lines (which likewise share numerous structures). The Project is needed to mitigate the possibility of a significant number of customers being interrupted who are served from either of these substations by creating a connection between them.

Additionally, this Project provides support for future economic growth activities in the area. Greater details can be found in Section (c) -- Power Flow Studies and Contingency Analyses below.

(C)(1)(c): ATSI modeled various planning scenarios and studies of the Project Area's Transmission System using the PJM 2023 RTEP summer power flow peak conditions for model year 2028 with and without the proposed Project. These studies included evaluation of the effects of the specific contingencies the proposed Project addresses.

Table 3-2, lists the applicable system load level evaluated in the power flow analysis.

Table 3-2

Model Load Levels[1]

Year	Load Level	Applicable System
2028	11,858 MW	ATSI

Power Flow Study Results

Table 3-3 provides a summary of the 2028 case evaluation of the load MW interrupted before and after installation of the proposed Project.

1. For the loss of the Lincoln Park-Lowellville 138-kV Transmission Line followed by the loss of the Lincoln Park-Masury 138 kV Transmission Line (or vice-versa), the Lincoln Park 23-kV area experiences potential local voltage collapse resulting in the interruption of 40 MW of load and approximately 10,000 customers.
2. For the loss of the Salt Springs-Riverbend 138 kV Transmission Line followed by the loss of the Riverbend-Wickliffe 138 kV Transmission Line (or vice-versa), the Riverbend 23-kV area becomes isolated from the transmission system resulting in the interruption of 30 MW of load and approximately 5,000 customers.
3. For the loss of the Salt Springs-Riverbend 138 kV Transmission Line followed by the loss of the Boardman-Wickliffe 138 kV Transmission Line (or vice-versa), the entire Riverbend/Wickliffe area become isolated from the transmission system resulting in the interruption of 52 MW of load and approximately 15,000 customers.

Table 3-3
2024 Case Evaluation

Contingency	Monitored Facility	Before Project Voltage Results PU	After Project Voltage Results PU	Before Project MW Interrupted (MW)	After Project MW Interrupted
Loss of the Lincoln Park-Lowellville 138 kV Transmission Line and loss of the Lincoln Park-Masury 138 kV Transmission Line	Lincoln Park 23 kV	Potential Voltage Collapse	1.01	35	0
Loss of the Salt Springs-Riverbend 138 kV Transmission Line and loss of the Riverbend-Wickliffe 138 kV Transmission Line	Riverbend 23 kV	NA (isolated buses/loss of load)	0.97	25	0
Loss of the Salt Springs-Riverbend 138 kV Transmission Line and loss of the Boardman-Wickliffe 138 kV Transmission Line	Wickliffe 138 kV/Riverbend 23 kV	NA (isolated buses/loss of load)	0.94	47	0

Load Flow Study

All models and associated files should be requested through PJM. This is due to the fact that the data in the power flow model and associated files are owned by PJM. ATSI only provides some of the data that goes into the model. All the other transmission owners and stakeholders also provide input to the model and associated files. PJM assembles the data and creates the model and associated files. The model and the associated file are not owned or controlled by ATSI.

The Project, which installs a 138 kV transmission line from the Lincoln Park 138 kV Substation to the Riverbend 138 kV Substation, was selected because it is the most efficient, long-term solution to resolve identified concerns that exist on the transmission system in the Project Study

Area while adding additional capacity on the system for economic development, load growth, and operational flexibility. Construction of the Project will provide operating flexibility and another source for power flow to and through the Project Study Area, affording greater flexibility and capacity for load growth and system maintenance and ensures the businesses, homes and communities in the area will have ready access to safe and reliable energy for many years to come.

All of the other transmission alternatives either would not resolve all of the concerns at a similar cost or, if such problems would be resolved, the alternatives would: (i) be short-term solutions; and (ii) require additional future investment to address the required overall necessary area improvements.

(D) System Performance

(D)(1): Please reference Section 4906-4-03(C)(1)(c) regarding system performance with and without the proposed facility.

(D)(2): Completion of the Project will resolve planning concerns for customers at risk in the Project Area's transmission system for the future year studied. ATSI has determined that bringing the Project online will not adversely impact any of ATSI's other existing transmission facilities, nor the transmission facilities and equipment of neighboring utilities. Overall performance on the Project Area's transmission system will be improved significantly as a result of the Project.

The potential for interrupting significant numbers of customers will be mitigated, and the Project Area's transmission system will have additional margin or capacity to allow ATSI the ability to support future economic growth and greater operational flexibility to continue to provide safe, efficient and reliable electricity to its customers. The Project will add an additional 138 kV source to both the Lincoln Park and Riverbend 138 kV substations, strengthening the 138 kV transmission system that provides local service to residential, commercial, and industrial customers in the area. In addition, transmission system maintenance and switching procedures will be less complex with this new transmission line, thus reducing customers' overall exposure to long-duration outages. Substation equipment and overhead transmission lines are inspected on a routine basis and have regular maintenance schedules to ensure proper reliability and reduce the chances of system outages.

(D)(3): Alternatives evaluated for this Project included:

The following alternatives were evaluated for their potential to eliminate the need for the Proposed Project:

1. Construction of a Lincoln Park-Shenango 138 kV Transmission Line
2. Construction of a second Salt Springs-Riverbend 138 kV Transmission Line

The alternatives listed above must both be completed in order to provide the same benefit to the affected customers that will be realized with the proposed Project. As stated above, the main issue addressed by the Project is that the Lincoln Park and Riverbend substations each only have two 138 kV sources. In order to mitigate the potential interruption of service to customers, a third source

must be added to both substations. The proposed Project builds one 138 kV transmission line between the two existing substations, providing a third source for each. The alternatives above require building two separate 138 kV transmission lines to provide a new 138 kV source for each substation. **Table 3-4** below provides a breakdown of approximate customer impacts and load impacts of the alternative's evaluation.

Table 3-4
2023 Alternative Project Evaluation

Proposed Solution	Estimated Line Mileage (miles)	Customers Impacted (rounded to nearest thousand)	MW Impacted (taken from Table 3-1)
Lincoln Park-Riverbend 138 kV Transmission Line	6.25	27,000	82
TOTAL	**6.25**	**27,000**	**82**
Alternatives			
Lincoln Park-Shenango 138 kV Transmission Line	10	10,000	35
Salt Springs-Riverbend #2 138 kV Transmission Line	5	17,000	47
TOTAL	**15**	**27,000**	**82**

As shown in **Table 3-4**, the proposed Project has a significantly lower transmission line footprint and impact. The proposed Project would require roughly 6.25 miles of 138 kV transmission line construction and which is approximately 2/3 less than the aggregated construction length for both the Lincoln Park-Shenango 138 kV Transmission Line and the Salt Springs-Riverbend #2 138 kV Transmission Line. This equates to less impact, leading to overall lower project costs.

ANALYSIS OF NON-TRANSMISSION ALTERNATIVES

In 2001, the State of Ohio made a policy decision to deregulate electric utilities. Through this deregulation, the State of Ohio mandated that transmission and generation remain legally separate and independent companies. As such, ATSI does not build or own generation and can only plan for transmission.

Inclusion of Energy Efficiency and Demand Side Management in PJM Forecasting

PJM's Reliability Pricing Model incorporates Energy Efficiency and Demand Side Management (DSM) resources. Consequently, the determination of need for this Project already accounts for

Energy Efficiency or DSM resources, which are built into the forecasts derived from PJM's Reliability Pricing Model.

(D)(4): The Project need was submitted as a supplement to the PJM RTEP at the Sub-Regional RTEP Committee on January 14, 2019, and the solution was presented March 25, 2019. See Section 4906-4-03(D)(4)(c) below.

(D)(4)(a): The Project is included in the 2025 LTFR (25-0504-EL-FOR) on page 44.

(D)(4)(b): Not applicable, see Section 4906-4-03(D)(4)(a) directly above.

(D)(4)(c): The Project need was submitted as a Supplemental Project to the PJM RTEP at the Sub-Regional RTEP Committee on January 14, 2019, and the solution was presented March 25, 2019. As proposed, the Project solution would improve operational flexibility, reliability, and infrastructure resilience; reduce the amount of local load loss under contingency conditions; and mitigate non-planning criteria concerns on the <100 kV system under a contingency (P6) condition. PJM evaluated the proposed Project and did not identify any FirstEnergy or PJM Planning Criteria violations caused by the Project. As such, there is no additional need for other network system upgrades as a result of the Project. PJM assigned the Project supplemental upgrade identification number s1947.

PJM, in its capacity as the regional Transmission Planning Coordinator, Transmission Planner and Transmission Operator, identifies the need and timing for mandatory transmission system upgrades as part of the reliability planning, economic planning, and interconnection planning process to preserve the reliability of the electricity grid that is under its operational control as the regional transmission organization. The PJM planning process is an 18-month cycle starting in September of every calendar year. The process ultimately produces a PJM Board approved RTEP 18 months later (February). The RTEP identifies transmission system upgrades and enhancements to provide for the operational, economic, and reliability requirements of PJM. The RTEP consists of system upgrades produced from one or more of four planning processes: reliability planning; economic planning; interconnection planning; and local planning.

Baseline upgrades are identified as part of the reliability planning and economic planning analysis. The analysis consists of a comprehensive series of detailed studies that are designed to satisfy PJM's reliability planning criteria and those of the applicable transmission owners, including FirstEnergy's Transmission Planning Criteria, as well as North American Electric Reliability Corporation ("NERC") and ReliabilityFirst Corporation reliability standards. The transmission planning process and the baseline RTEP projects selected for construction under that process are required by the applicable reliability and planning criteria and, once approved by PJM, are mandatory. Transmission owners are obligated to build these projects under Section 1.7 of Schedule 6 of the PJM Operating Agreement. These projects are identified with an upgrade identification starting with the letter "b" followed by a four-digit number.

Supplemental upgrades are projects initiated by a transmission owner and are part of the local planning process. In accordance with Attachment M-3 of the PJM Open Access Transmission Tariff ("OATT'), FirstEnergy provides information regarding the criteria used to plan and identify

Supplemental Projects at an Assumptions Meeting. The process for developing Supplemental upgrades includes identification and review of system needs at a separate Needs meeting and provides an opportunity for stakeholders to comment. Next, there is a Solutions meeting where potential solutions and any considered alternatives are discussed. Stakeholders may then provide comments on the potential solutions.

FirstEnergy supplemental upgrades are typically: (i) a request for electric service from new or existing customers; and/or, (ii) a project identified pursuant to FirstEnergy's Energizing the Future methodology. This methodology and any identified projects are presented to PJM and the PJM stakeholders in accordance with the PJM OATT, Attachment M-3, as described above. ATSI Reliability Enhancement projects, like the proposed Project, are presented at the PJM Subregional RTEP Western committee meetings, which occur monthly. Supplemental upgrades that have been reviewed through the Attachment M-3 process are identified with an "s" followed by a four-digit number. Although supplemental upgrades are not mandated or directed by PJM, they are necessary in order to address planning functions not transferred to PJM (e.g., asset management, customer interconnections). These projects reflect the PJM TOs' obligation to provide reliable service in its local service territories and are grounded in Good Utility Practice.

In general, FirstEnergy's reliability enhancement methodology is intended to: (i) proactively upgrade or replace transmission lines and substation components that present an increasing risk to reliability; (ii) modernize the Operating Companies' transmission infrastructure by implementing technological advances to enhance reliability and promote increased efficiencies; (iii) increase or restore load serving capability; (iv) improve the resiliency of the existing transmission system to better withstand and recover from storms and unusual weather events such as extreme heat and cold; (v) address heightened concerns with cyber and physical security; (vi) improve customer reliability by installing new equipment with real-time monitoring capabilities to optimize maintenance intervals and reduce the likelihood of equipment failure; and (vii) better address our customers' needs by reducing the duration and frequency of unscheduled outages. Reliability Enhancement projects, like the proposed Project, are largely driven to meet customers' increasing reliability demands.

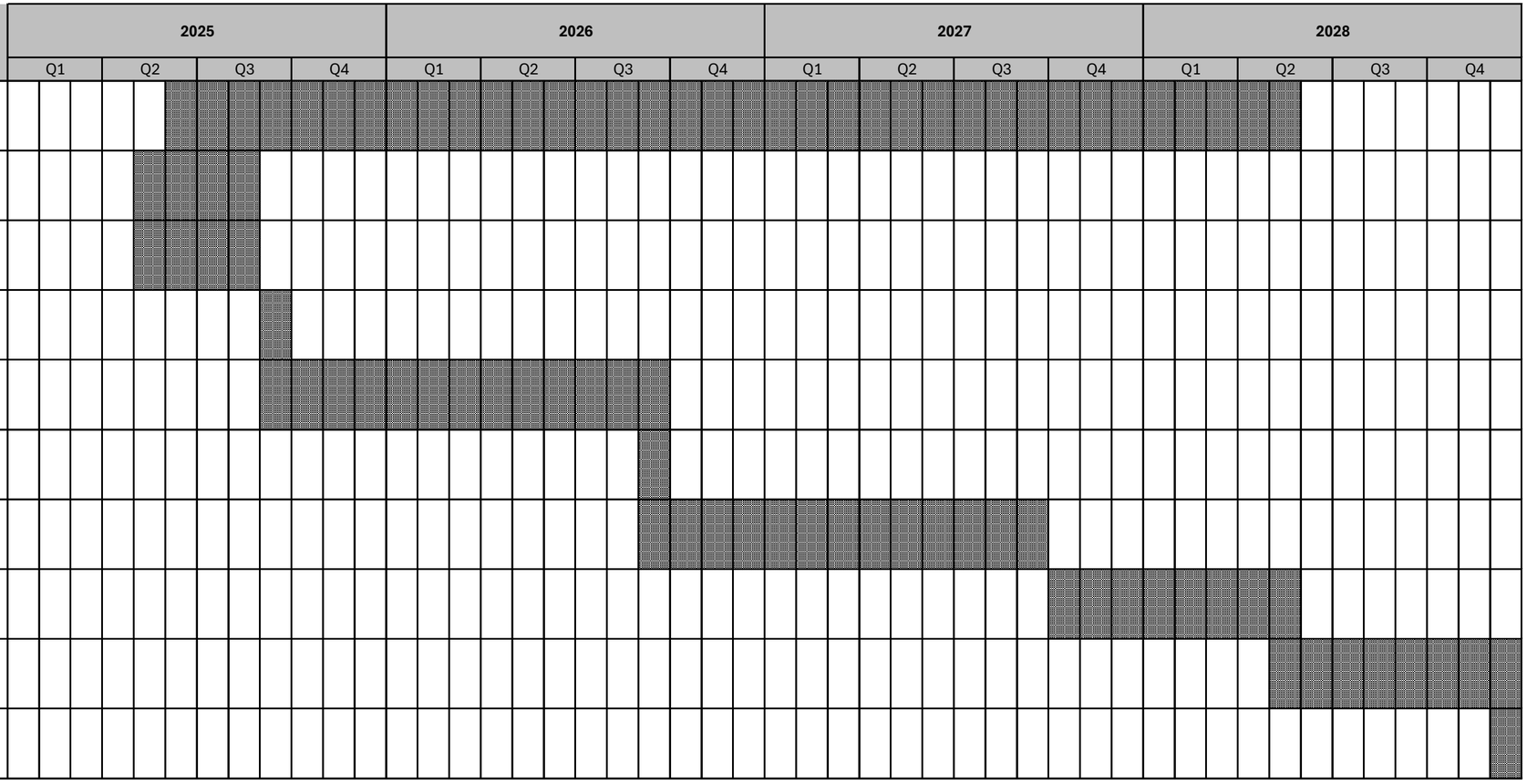
This Project was reviewed in accordance with the PJM OATT Attachment M-3 process, as described above, and presented at the PJM Sub-Regional RTEP Committee on January 14, 2019, and March 25, 2019. PJM assigned the Project supplemental upgrade identification number s1947.

(E): This code provision relates to gas pipeline projects and is therefore not applicable to this Project.

FIGURE 3-1

YOUNGSTOWN 138 kV REINFORCEMENT PROJECT SCHEDULE

TASK	START	END
Acquisition of Rights of Way, Land, and Land Rights	6/4/25	5/30/28
Acquisition of Grid Interconnection Studies and Other Critical Path Milestones for Project Construction	5/5/25	9/2/25
Preparation of the Application	5/5/25	9/2/25
Submittal of the Application for Certificate	9/2/25	9/2/25
OPSB Review	9/2/25	9/2/26
Issuance of the Certificate	9/2/25	9/2/26
Preparation of the Final Design	5/22/25	9/9/27
Preconstruction	10/1/27	5/1/28
Construction of the Facility	5/1/28	12/1/28
Placement of the Facility in Service	12/15/28	12/15/28



Riverbend Substation
Lincoln Park Substation
4
1
3
2
YOUNGSTOWN
MAHONING COUNTY
URBAN TOWNSHIP
COITSVILLE TOWNSHIP
CAMPBELL
Youngstown
Campbell
Mahoning River
Crab Creek
East Branch Crab Creek
Dry Run
McKelvey Lake
Coitsville Ditch
Mill Creek
Lake Glacier
Lily Pond
Bears Den Run
Lake Cohasset
Pine Hollow Creek
Youngstown Foundation Ampitheater
Covelli Centre
Wean Park
Oak Street Park
Lincoln Park
Oakland Field
Youngstown Playground
Southside Park
Gibson Field
Scienceville
Fosterville

N
0 1,000 2,000 4,000 Feet

Reference Layers
- Existing Substation
- Proposed Route
- Railroad
- 2,000-foot Corridor
- Ohio USGS 7.5" Topographical Quandrangle
- City or Town
- Township Boundary
- County Boundary
- Sheet Index Boundary

Constraints
- PointsofInterest
- National Register Listing (OHPO)
- National Register Determinations of Eligibility (OHPO)
- Cemetery (OHPO)
- Museum
- Monument
- Well
- Non GPS Well
- Church
- School
- Stream (National Hydrography Dataset)
- Residence
- Sensitive Land Use/Parks
- Land Bank Parcel
- City Owned Parcel
- Water Bodies (National Hydrography Dataset)

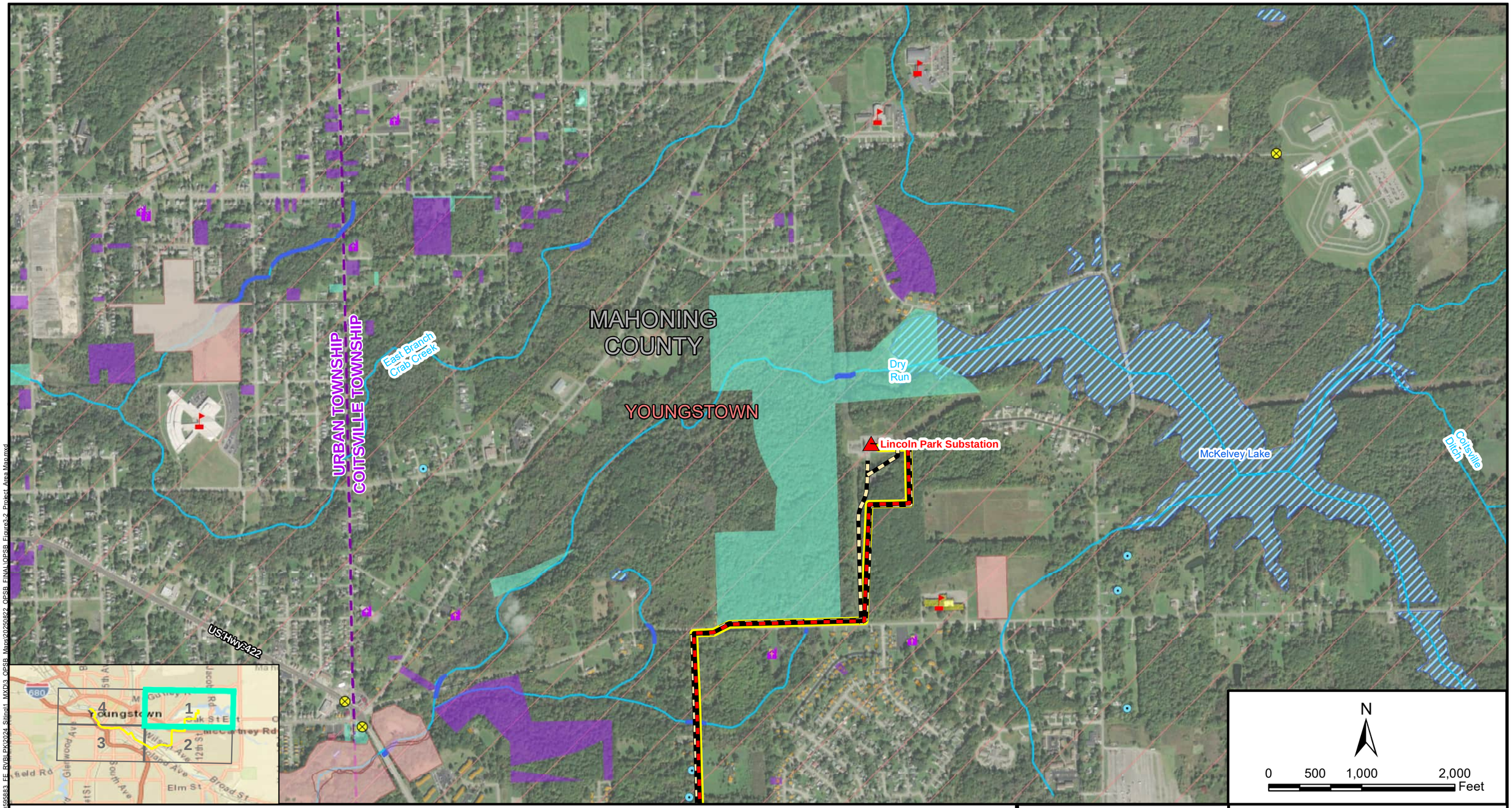
Source: BMCD, ESRI, ARCGIS Online World Street Map

ATSI

FIGURE 3-2
PROJECT AREA MAP INDEX

YOUNGSTOWN 138KV REINFORCEMENT TRANSMISSION LINE

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LEGEND:

- Existing Substation
- Proposed Route
- Preliminary Proposed Access Roads
- Proposed Right-of-Way (65-ft Corridor)
- Township Boundary
- City or Town
- County Boundary
- National Register Listing (OHPO)
- National Register Determinations of Eligibility (OHPO)
- Cemetery (OHPO)
- Museum
- Monument
- Well
- Non GPS Well
- Church
- School
- Commercial
- Industrial
- Institutional
- Park
- Residential
- Sensitive Land Use/Parks
- Land Bank Parcel
- City Owned Parcel
- National Wetland Inventory Area
- Water Bodies (National Hydrography Dataset)
- Stream (National Hydrography Dataset)

Source: BMCD, ESRI, ARCGIS Online World Street Map

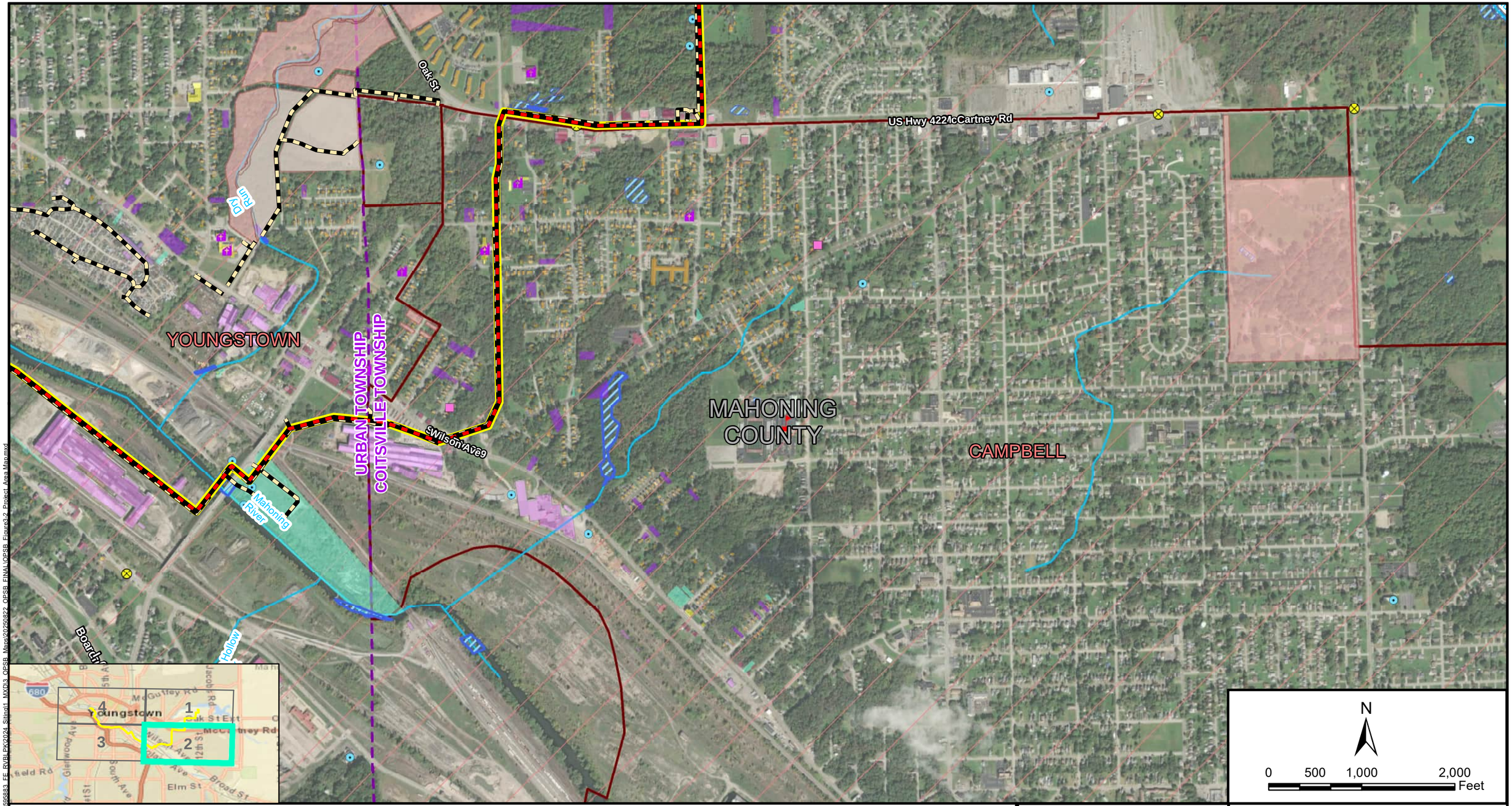
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FIGURE 3-2
PROJECT AREA MAP

YOUNGSTOWN 138KV REINFORCEMENT
TRANSMISSION LINE

PAGE 1 OF 4

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LEGEND:

- Existing Substation
- Proposed Route
- Preliminary Proposed Access Roads
- Proposed Right-of-Way (65-ft Corridor)
- Township Boundary
- City or Town
- County Boundary
- National Register Listing (OHPO)
- National Register Determinations of Eligibility (OHPO)
- Cemetery (OHPO)
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- National Wetland Inventory Area
- Water Bodies (National Hydrography Dataset)
- Stream (National Hydrography Dataset)

Source: BMCD, ESRI, ARCGIS Online World Street Map

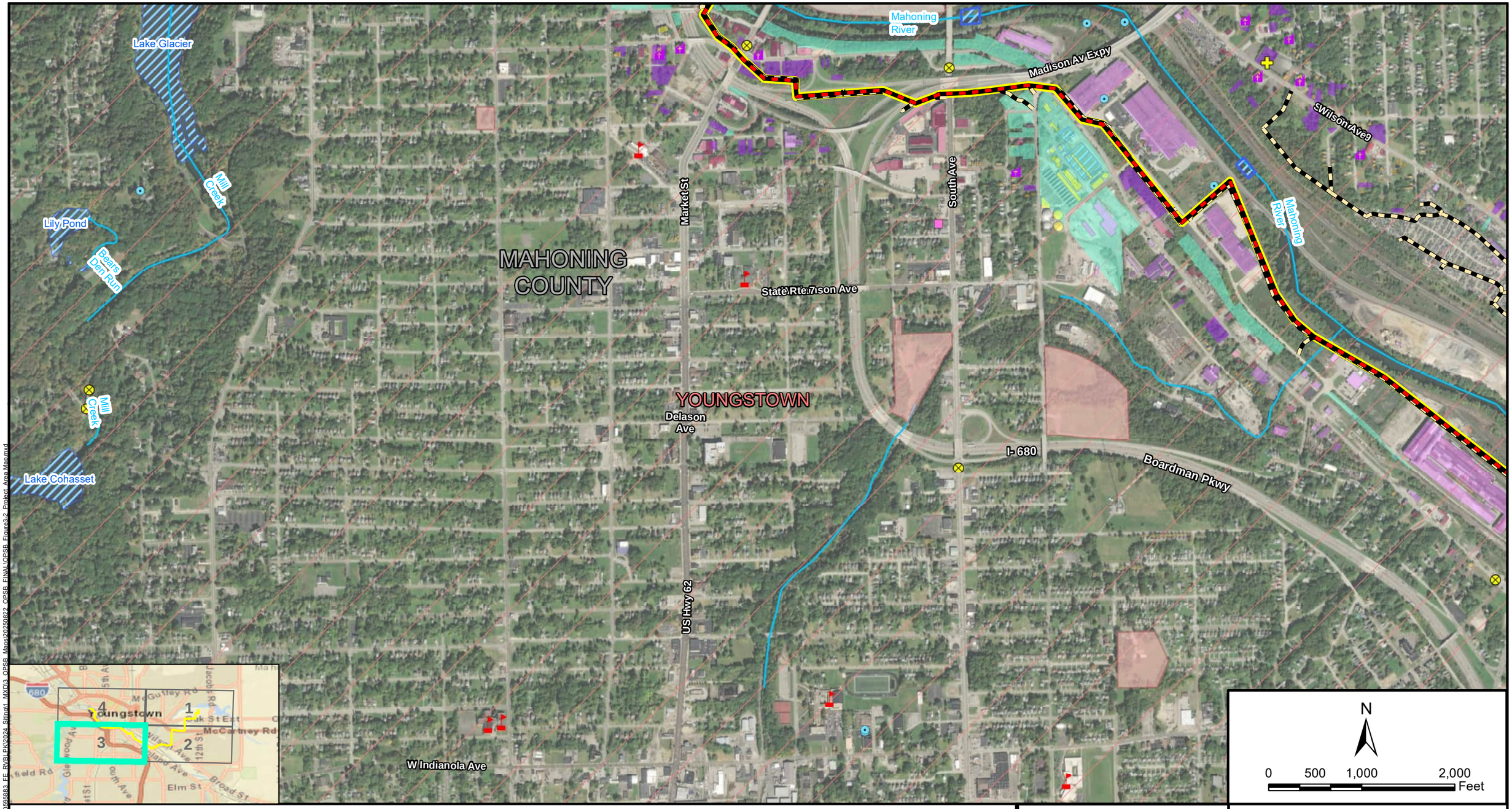
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FIGURE 3-2
PROJECT AREA MAP

YOUNGSTOWN 138KV REINFORCEMENT
TRANSMISSION LINE

PAGE 2 OF 4

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N

0 500 1,000 2,000 Feet

LEGEND:

- Existing Substation
- Proposed Route
- Preliminary Proposed Access Roads
- Proposed Right-of-Way (65-ft Corridor)
- Township Boundary
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- County Boundary
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- National Register Determinations of Eligibility (OHPO)
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- Land Bank Parcel
- City Owned Parcel
- National Wetland Inventory Area
- Water Bodies (National Hydrography Dataset)
- Stream (National Hydrography Dataset)

ATSI

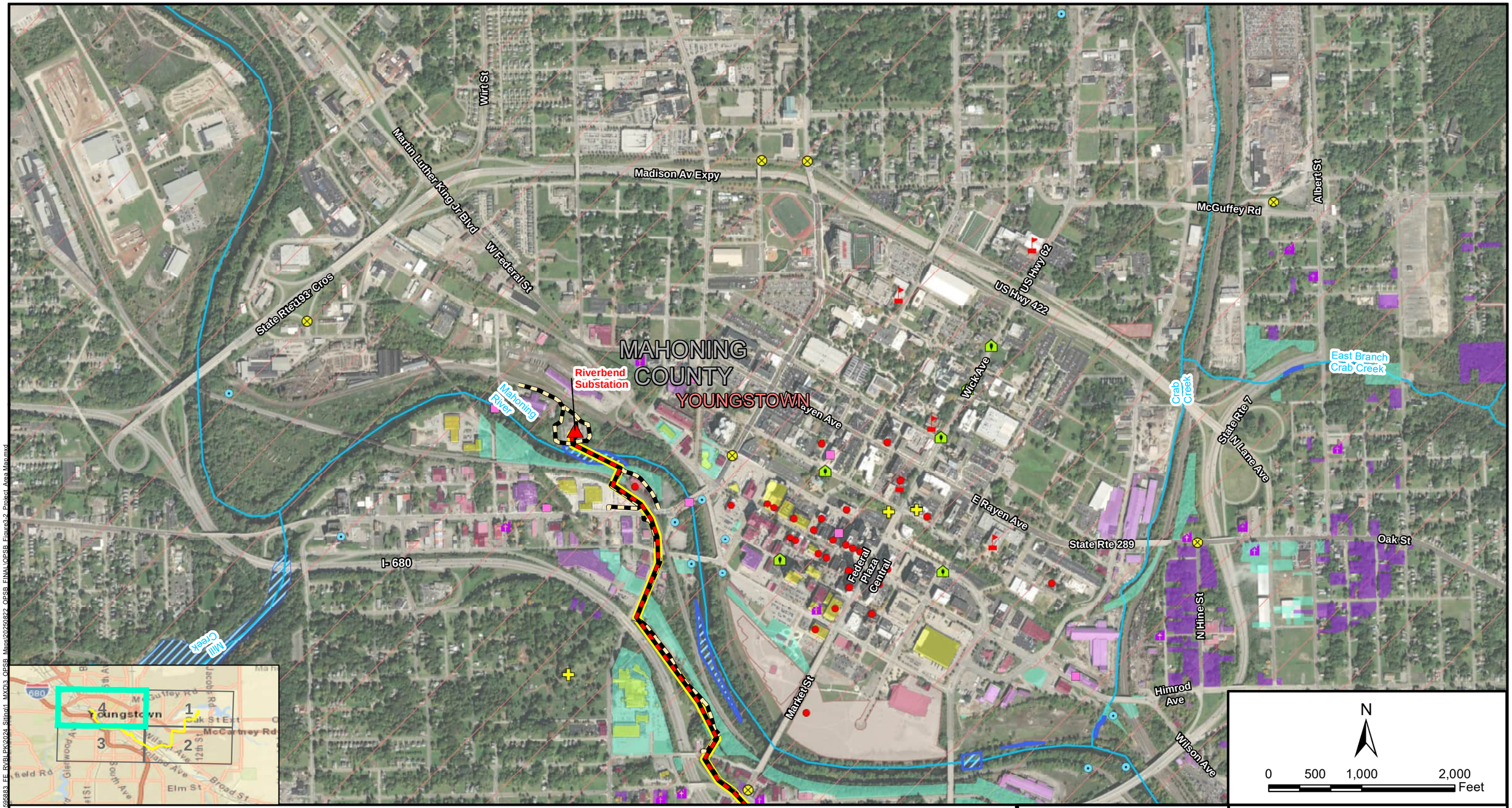
FIGURE 3-2
PROJECT AREA MAP

YOUNGSTOWN 138KV REINFORCEMENT
TRANSMISSION LINE

PAGE 3 OF 4

Source: BMCD, ESRI, ARCGIS Online World Street Map

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LEGEND:

- Existing Substation
- Proposed Route
- Preliminary Proposed Access Roads
- Proposed Right-of-Way (65-ft Corridor)
- Township Boundary
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- County Boundary
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- National Wetland Inventory Area
- Water Bodies (National Hydrography Dataset)
- Stream (National Hydrography Dataset)

Source: BMCD, ESRI, ARCGIS Online World Street Map

ATSI

FIGURE 3-2
PROJECT AREA MAP

YOUNGSTOWN 138KV REINFORCEMENT
TRANSMISSION LINE

PAGE 4 OF 4

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Riverbend Substation
Lincoln Park Substation
Mahoning River
Crab Creek
East Branch Crab Creek
Dry Run
McKelvey Lake
Coitsville Ditch
Lake Glacier
Mill Creek
Lily Pond
Bears Den Run
Lake Cohasset
Pine Hollow Creek
1
2
3
4
5
6
7
8
9
10
11
12
Scienceville
YOUNGSTOWN
East Side
Fosterville
CAMPBELL
ROOSEVELT PARK
Wick Park
Lincoln Knolls Plaza Shopping Center
Uptown Shopping Center
Gibson Park
Gordon Park
Jackson Cem
Radio Tower (WFMJ)
Water Tank
Receiving Hospital
St Elizabeths Hospital
Youngstown State University

N

0 1,000 2,000 4,000 Feet

LEGEND:

- Existing Substation
- Proposed Route
- Stream (National Hydrography Dataset)
- Water Bodies (National Hydrography Dataset)
- Sheet Index Boundary

Source: BMCD, ESRI, ARCGIS Online World Street Map

ATSI

FIGURE 3-3
PRELIMINARY CONSTRUCTION AND ACCESS MAP INDEX

YOUNGSTOWN 138KV REINFORCEMENT TRANSMISSION LINE

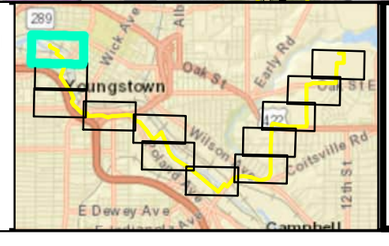
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AP-01
Bam St
W West Ave
Riverbend Substation
STR#:1
Mahoning River
STR#:2
STR#:3
Tod Ave
Barclay Ct
Clark St
AP-03
Mahoning Ave
STR#:4
AP-02
AP-03a
STR#:5
STR#:6
Deed St
Hogue St
Oakhill Ave NE
North Ave
W Federal St
Martin Luther King Jr Blvd
Behmont Ave
Behmont Ct
Orchard Pl
Wate
Rayen Ave
W Wood St
5th Ave
W Commerce St
Spring Cmn
W Front St
Federal Plz W
N Chestnut St
S Chestnut St
Market Ct
W Boardman St
Vindicator Sq

N
0 100 200 400 Feet

LEGEND:
- Existing Substation
- Structures
- Access Entrance
- Proposed Route
- Temporary Access Roads
- Proposed Right-of-Way (65-ft Corridor)
- National Register Listing (OHPO)
- National Register Determinations of Eligibility (OHPO)
- Cemetery (OHPO)
- Museum
- Monument
- Well
- Non GPS Well
- Church
- School
- Stream (National Hydrography Dataset)
- Sensitive Land Use/Parks
- Land Bank Parcel
- National Wetland Inventory Area
- City Owned Parcel

Land Use Type
- Commercial
- Industrial
- Institutional
- Park
- Residential



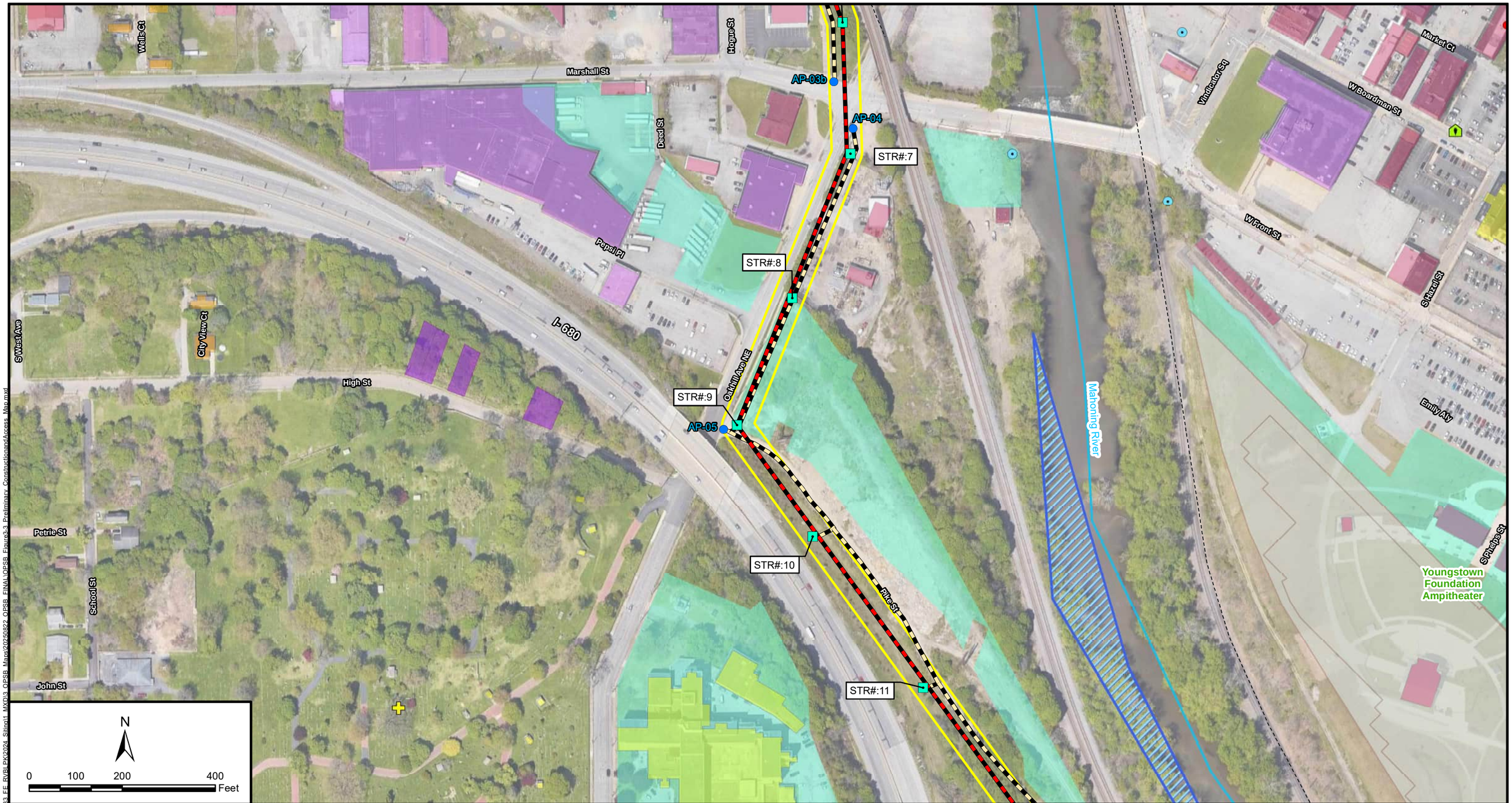
Source: BMCD, ESRI, ARCGIS Online World Street Map

ATSI

FIGURE 3-3
PRELIMINARY CONSTRUCTION AND ACCESS MAP
SHEET 1 OF 12

YOUNGSTOWN 138KV REINFORCEMENT TRANSMISSION LINE

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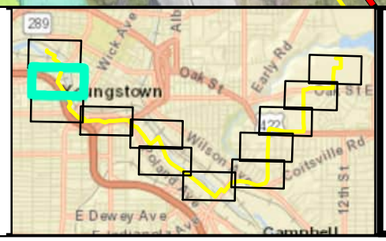


LEGEND:

- Existing Substation
- Structures
- Access Entrance
- Proposed Route
- Temporary Access Roads
- Proposed Right-of-Way (65-ft Corridor)
- National Register Listing (OHPO)
- National Register Determinations of Eligibility (OHPO)
- Cemetery (OHPO)
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- Land Bank Parcel
- National Wetland Inventory Area
- City Owned Parcel

Land Use Type

- Commercial
- Industrial
- Institutional
- Park
- Residential



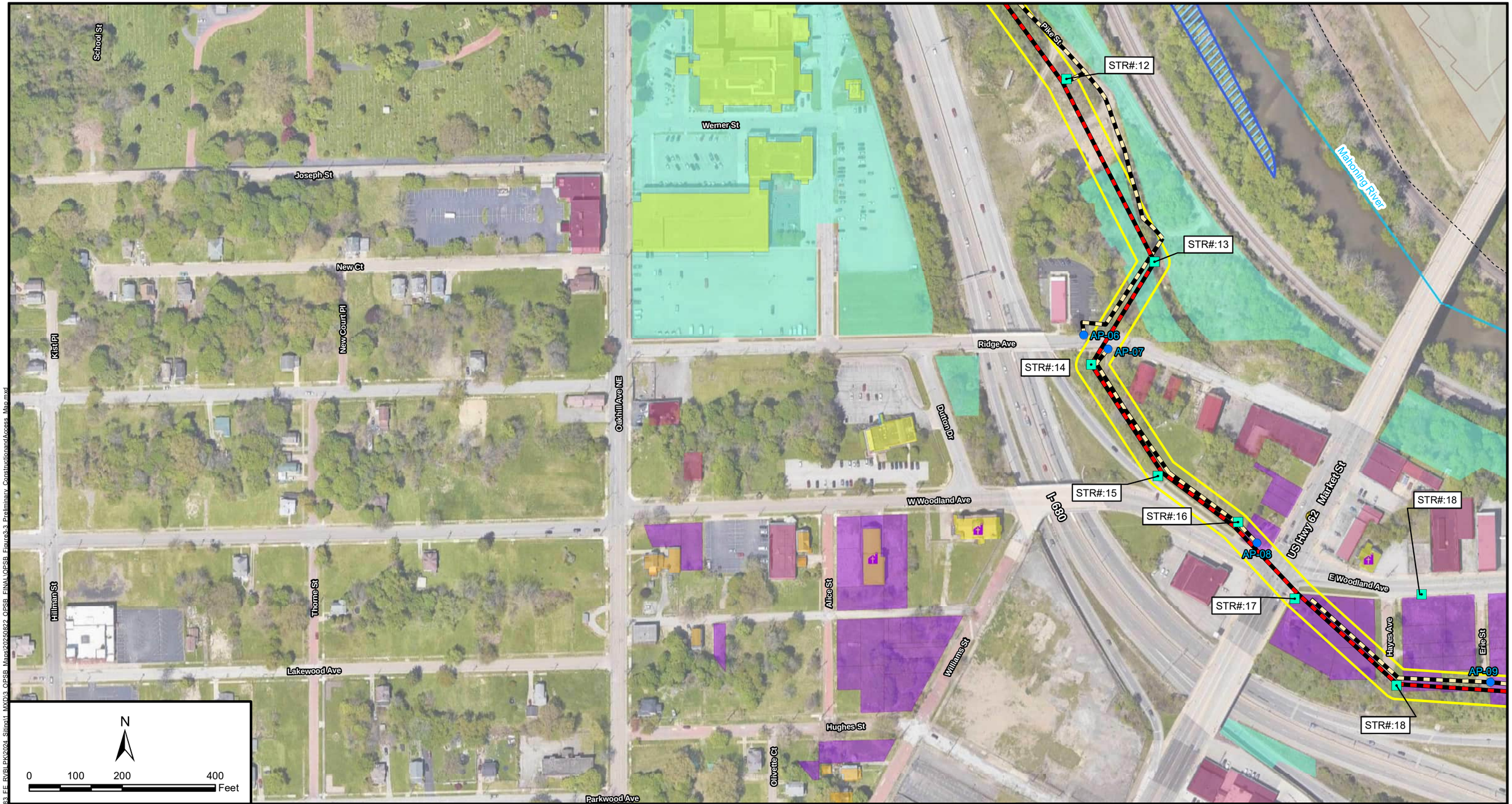
Source: BMCD, ESRI, ARCGIS Online World Street Map

ATSI

FIGURE 3-3
PRELIMINARY CONSTRUCTION AND ACCESS MAP
SHEET 2 OF 12

YOUNGSTOWN 138KV REINFORCEMENT TRANSMISSION LINE

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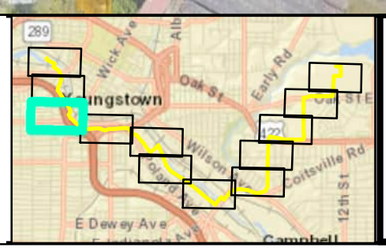


LEGEND:

- Existing Substation
- Structures
- Access Entrance
- Proposed Route
- Temporary Access Roads
- Proposed Right-of-Way (65-ft Corridor)
- National Register Listing (OHPO)
- National Register Determinations of Eligibility (OHPO)
- Cemetery (OHPO)
- Museum
- Monument
- Well
- Non GPS Well
- Church
- School
- Stream (National Hydrography Dataset)
- Sensitive Land Use/Parks
- Land Bank Parcel
- National Wetland Inventory Area
- City Owned Parcel

Land Use Type

- Commercial
- Industrial
- Institutional
- Park
- Residential



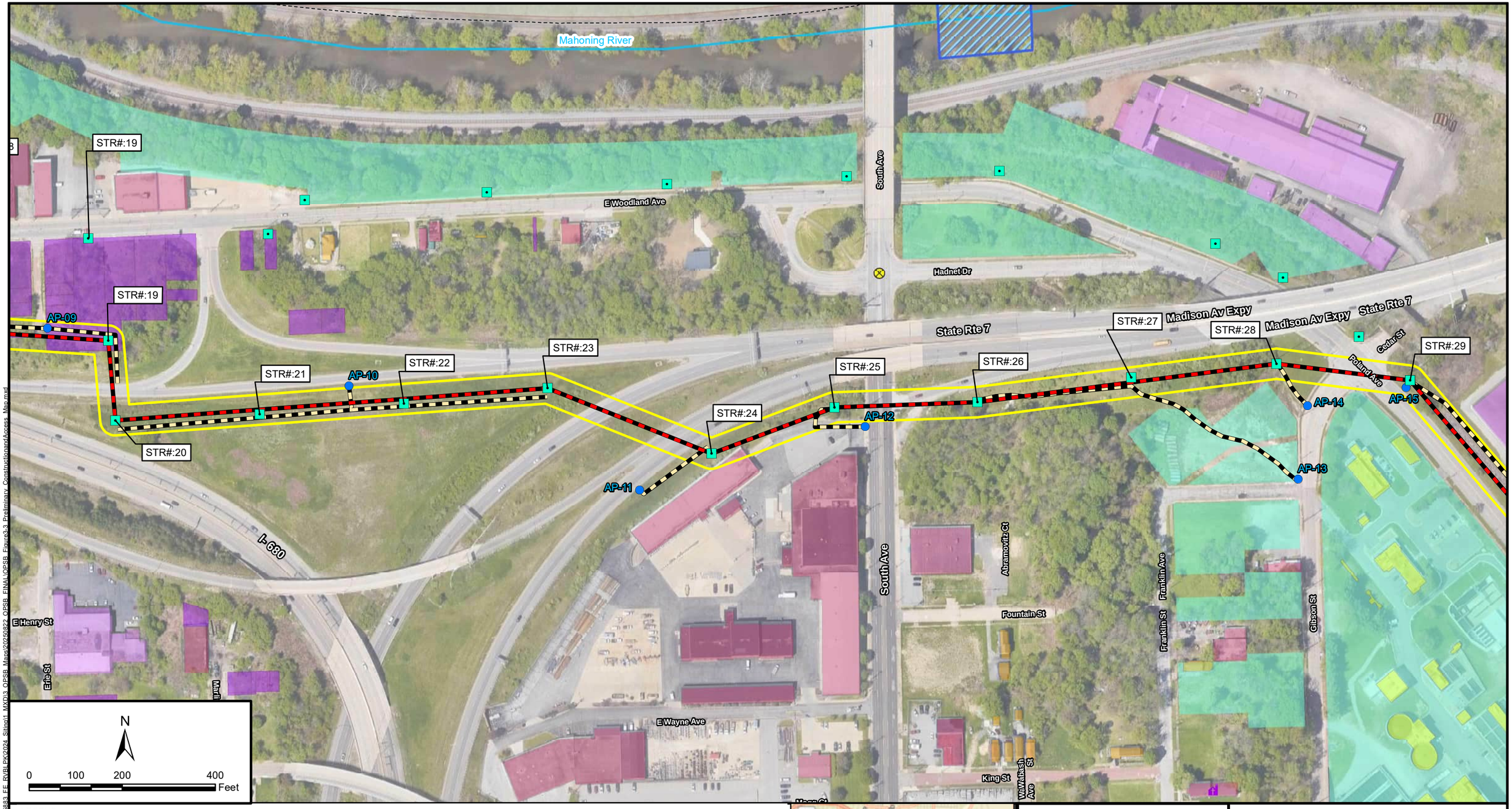
Source: BMCD, ESRI, ARCGIS Online World Street Map

ATSI

FIGURE 3-3
PRELIMINARY CONSTRUCTION AND ACCESS MAP
SHEET 3 OF 12

YOUNGSTOWN 138KV REINFORCEMENT TRANSMISSION LINE

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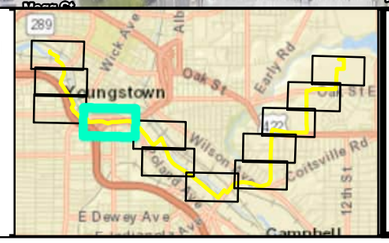


LEGEND:

- Existing Substation
- Structures
- Access Entrance
- Proposed Route
- Temporary Access Roads
- Proposed Right-of-Way (65-ft Corridor)
- National Register Listing (OHPO)
- National Register Determinations of Eligibility (OHPO)
- Cemetery (OHPO)
- Museum
- Monument
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- Non GPS Well
- Church
- School
- Stream (National Hydrography Dataset)
- Sensitive Land Use/Parks
- Land Bank Parcel
- National Wetland Inventory Area
- City Owned Parcel

Land Use Type

- Commercial
- Industrial
- Institutional
- Park
- Residential



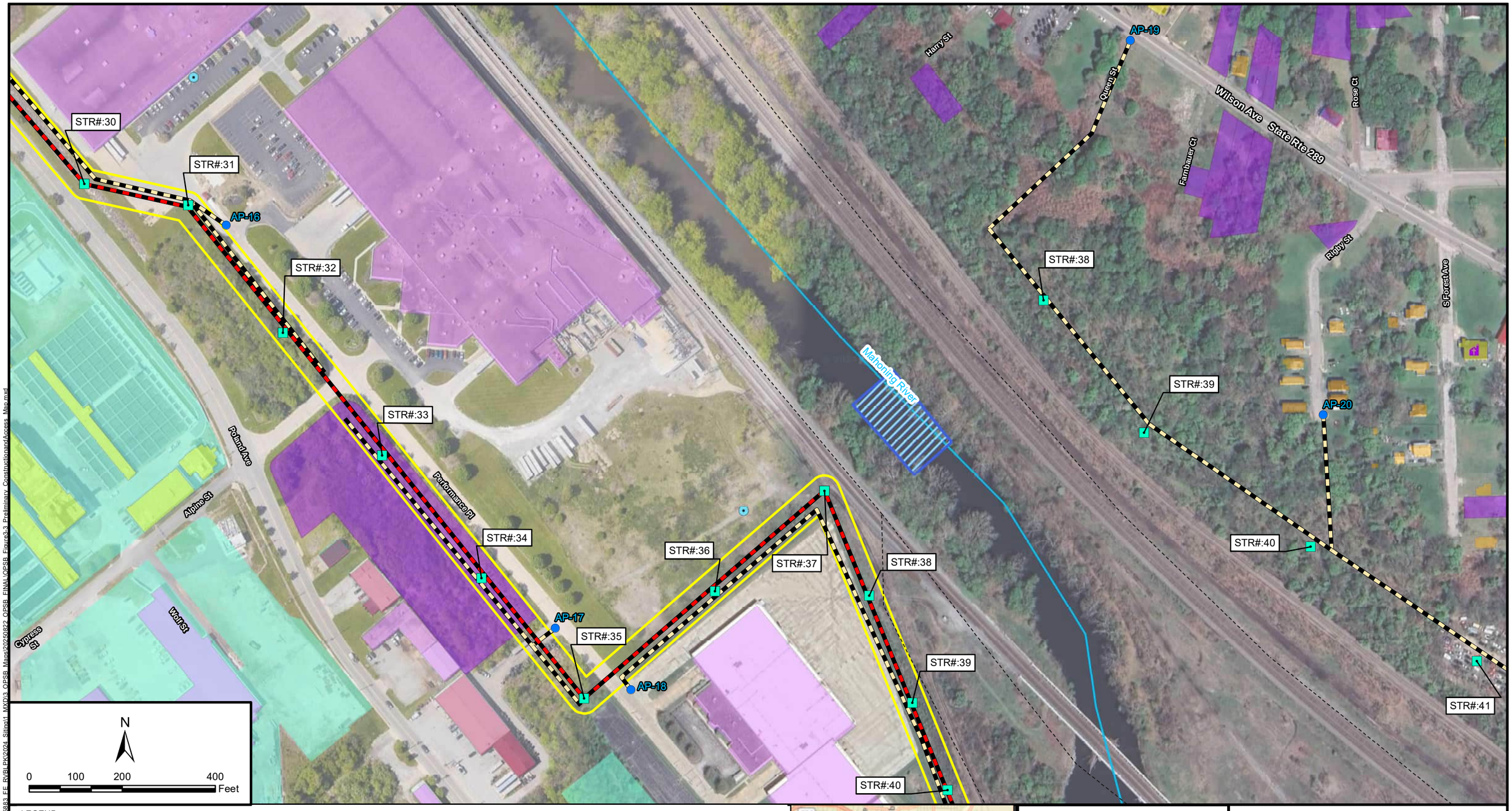
Source: BMCD, ESRI, ARCGIS Online World Street Map

ATSI

FIGURE 3-3
PRELIMINARY CONSTRUCTION AND ACCESS MAP
SHEET 4 OF 12

YOUNGSTOWN 138KV REINFORCEMENT
TRANSMISSION LINE

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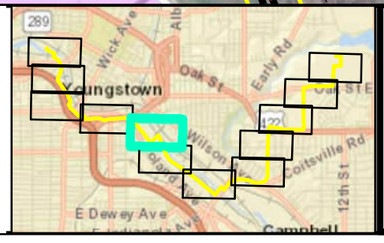


LEGEND:

- Existing Substation
- Structures
- Access Entrance
- Proposed Route
- Temporary Access Roads
- Proposed Right-of-Way (65-ft Corridor)
- National Register Listing (OHPO)
- National Register Determinations of Eligibility (OHPO)
- Cemetery (OHPO)
- Museum
- Monument
- Well
- Non GPS Well
- Church
- School
- Stream (National Hydrography Dataset)
- Sensitive Land Use/Parks
- Land Bank Parcel
- National Wetland Inventory Area
- City Owned Parcel

Land Use Type

- Commercial
- Industrial
- Institutional
- Park
- Residential



Source: BMCD, ESRI, ARCGIS Online World Street Map

ATSI

FIGURE 3-3
PRELIMINARY CONSTRUCTION AND ACCESS MAP
SHEET 5 OF 12

YOUNGSTOWN 138KV REINFORCEMENT TRANSMISSION LINE

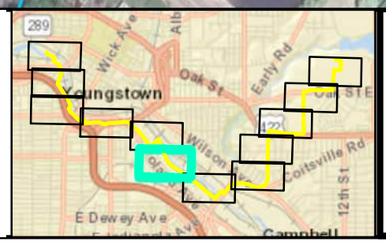
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STR#:40
STR#:41
STR#:42
STR#:43
STR#:44
STR#:45
STR#:46
STR#:47
STR#:48
STR#:42
AP-22
Arbuckle St
Tube St
Poland Ave
Performance Pl
Britain St
Jones St
Mahoning River

N
0 100 200 400 Feet

LEGEND:
- Existing Substation
- Structures
- Access Entrance
- Proposed Route
- Temporary Access Roads
- Proposed Right-of-Way (65-ft Corridor)
- National Register Listing (OHPO)
- National Register Determinations of Eligibility (OHPO)
- Cemetery (OHPO)
- Museum
- Monument
- Well
- Non GPS Well
- Church
- School
- Stream (National Hydrography Dataset)
- Sensitive Land Use/Parks
- Land Bank Parcel
- National Wetland Inventory Area
- City Owned Parcel

Land Use Type
- Commercial
- Industrial
- Institutional
- Park
- Residential



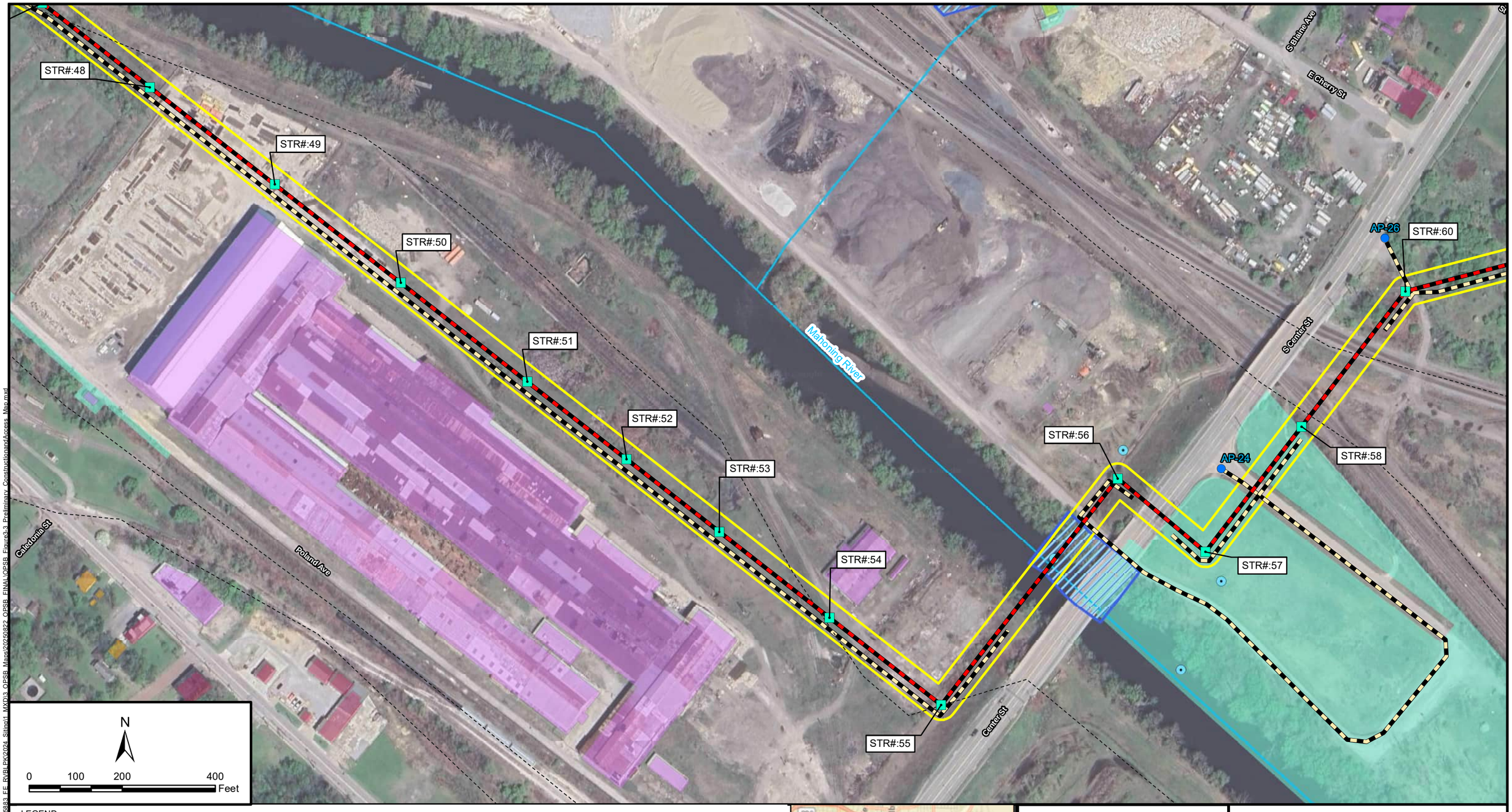
Source: BMCD, ESRI, ARCGIS Online World Street Map

ATSI

FIGURE 3-3
PRELIMINARY CONSTRUCTION AND ACCESS MAP
SHEET 6 OF 12

YOUNGSTOWN 138KV REINFORCEMENT TRANSMISSION LINE

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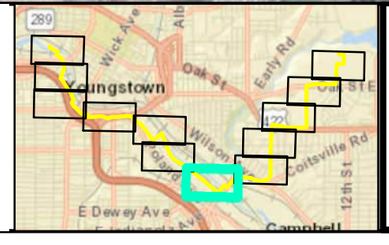


LEGEND:

- Existing Substation
- Structures
- Access Entrance
- Proposed Route
- Temporary Access Roads
- Proposed Right-of-Way (65-ft Corridor)
- National Register Listing (OHPO)
- National Register Determinations of Eligibility (OHPO)
- Cemetery (OHPO)
- Museum
- Monument
- Well
- Non GPS Well
- Church
- School
- Stream (National Hydrography Dataset)
- Sensitive Land Use/Parks
- Land Bank Parcel
- National Wetland Inventory Area
- City Owned Parcel

Land Use Type

- Commercial
- Industrial
- Institutional
- Park
- Residential



Source: BMCD, ESRI, ARCGIS Online World Street Map

ATSI

FIGURE 3-3
PRELIMINARY CONSTRUCTION AND ACCESS MAP
SHEET 7 OF 12

YOUNGSTOWN 138KV REINFORCEMENT TRANSMISSION LINE

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Youngstown Playground
Dry Run
N Blaine Ave
S Blaine Ave
N Center St
S Center St
Hazeltine Ave
N Montgomery Ave
Hickory St
Lawrence St
E Lawrence St
Palmer Ave
Morley Ave
State Rte 289
Wilson Ave
Montgomery Ave
Keystone St
Van Buren Ave
Lettie Ave
Columbus Ave
Courtland Ave
Starr Ave
Coitsville Rd
Fairview St
Ohio St
STR#:60
STR#:61
STR#:62
STR#:63
STR#:64
STR#:65
STR#:66
STR#:67
STR#:68
AP-28
AP-29
N
0 100 200 400 Feet

LEGEND:
- Existing Substation
- Structures
- Access Entrance
- Proposed Route
- Temporary Access Roads
- Proposed Right-of-Way (65-ft Corridor)
- National Register Listing (OHPO)
- National Register Determinations of Eligibility (OHPO)
- Cemetery (OHPO)
- Museum
- Monument
- Well
- Non GPS Well
- Church
- School
- Stream (National Hydrography Dataset)
- Sensitive Land Use/Parks
- Land Bank Parcel
- National Wetland Inventory Area
- City Owned Parcel

Land Use Type
- Commercial
- Industrial
- Institutional
- Park
- Residential

Source: BMCD, ESRI, ARCGIS Online World Street Map

ATSI

FIGURE 3-3
PRELIMINARY CONSTRUCTION AND ACCESS MAP
SHEET 8 OF 12

YOUNGSTOWN 138KV REINFORCEMENT TRANSMISSION LINE

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AP-32
STR#:73
STR#:72
Bellview Ave
Richmond Ave
N Blaine Ave
STR#:71
AP-31
Gladstone St
Lettie Ave
Courtland Ave
N Center St
Hazeltine Ave
Hazeltine Ave
STR#:70
Keystone St
AP-30
Freedom Ave
Fairdale Ave
STR#:69
Van Buren Ave

N

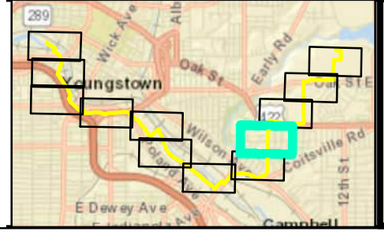
0 100 200 400 Feet

LEGEND:

- Existing Substation
- Structures
- Access Entrance
- Proposed Route
- Temporary Access Roads
- Proposed Right-of-Way (65-ft Corridor)
- National Register Listing (OHPO)
- National Register Determinations of Eligibility (OHPO)
- Cemetery (OHPO)
- Museum
- Monument
- Well
- Non GPS Well
- Church
- School
- Stream (National Hydrography Dataset)
- Sensitive Land Use/Parks
- Land Bank Parcel
- National Wetland Inventory Area
- City Owned Parcel

Land Use Type

- Commercial
- Industrial
- Institutional
- Park
- Residential



Source: BMCD, ESRI, ARCGIS Online World Street Map

ATSI

FIGURE 3-3
PRELIMINARY CONSTRUCTION AND ACCESS MAP
SHEET 9 OF 12

YOUNGSTOWN 138KV REINFORCEMENT TRANSMISSION LINE

X:\DCS\Projects\IMS\FIRSTENERGY\OHIO_Projects\60595883_FE_RVBLPKY2024_Silliman1_MXD\3_OPSB_Maps\20250822_OPSB_FINAL\OPSB_Figure3-3_Preliminary_ConstructionandAccess_Map.mxd

STR#:67 and 85

STR#:66 and 84

STR#:65 and 83

STR#:64 and 82

STR#:61 and 79

STR#:74

STR#:57 and 75

STR#:59 and 77

STR#:60 and 78

STR#:63 and 81

AP-36

AP-37

AP-38

AP-39

Kendis Cir

Keystone Ave

Camden Ave

Lamar Ave

Oak Ln

SR 422

McCartney Rd

US Hwy 422

McCartney Rd

Courtland Ave

Lettie Ave

Adeline Ave

Woodland Ave

N

0 100 200 400 Feet

LEGEND:

- Existing Substation
- Structures
- Access Entrance
- Proposed Route
- Temporary Access Roads
- Proposed Right-of-Way (65-ft Corridor)
- National Register Listing (OHPO)
- National Register Determinations of Eligibility (OHPO)
- Cemetery (OHPO)
- Museum
- Monument
- Well
- Non GPS Well
- Church
- School
- Stream (National Hydrography Dataset)
- Sensitive Land Use/Parks
- Land Bank Parcel
- National Wetland Inventory Area
- City Owned Parcel

Land Use Type

- Commercial
- Industrial
- Institutional
- Park
- Residential

Source: BMCD, ESRI, ARCGIS Online World Street Map

ATSI

FIGURE 3-3
PRELIMINARY CONSTRUCTION AND ACCESS MAP
SHEET 10 OF 12

YOUNGSTOWN 138KV REINFORCEMENT TRANSMISSION LINE

X:\DCS\Projects\MSI\FIRSTENERGY\OHIO_Projects\60695883_FE_RVBLBK2024_Silimn1_MXD\3_ORSB_Maps\20250822_ORSB_FINAL\ORSB_Figure3-3_PreliminaryConstructionandAccess_Map.mxd

STR#:72 and 90
STR#:73 and 91
STR#:74 and 92
STR#:75 and 93
STR#:76 and 94
STR#:77 and 95
STR#:80 and 98
STR#:79 and 97
STR#:78 and 96
STR#:71 and 89
STR#:70 and 88
STR#:69 and 87
STR#:68 and 86
AP-39
AP-40
AP-41
Oak St Exd
Lamar Ave
Mumford Dr
Greeley Ln
Chatham Ln
Chatman Ln
Lilburne Dr
Elliot Ln
Duncan Ln

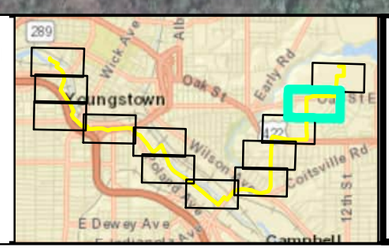
N
0 100 200 400 Feet

LEGEND:

- Existing Substation
- Structures
- Access Entrance
- Proposed Route
- Temporary Access Roads
- Proposed Right-of-Way (65-ft Corridor)
- National Register Listing (OHPO)
- National Register Determinations of Eligibility (OHPO)
- Cemetery (OHPO)
- Museum
- Monument
- Well
- Non GPS Well
- Church
- School
- Stream (National Hydrography Dataset)
- Sensitive Land Use/Parks
- Land Bank Parcel
- National Wetland Inventory Area
- City Owned Parcel

Land Use Type

- Commercial
- Industrial
- Institutional
- Park
- Residential



Source: BMCD, ESRI, ARCGIS Online World Street Map

ATSI

FIGURE 3-3
PRELIMINARY CONSTRUCTION AND ACCESS MAP
SHEET 11 OF 12

YOUNGSTOWN 138KV REINFORCEMENT TRANSMISSION LINE

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Lincoln Park Substation

STR#:88 and 106

STR#:87 and 105

STR#:104 and 86

STR#:85 and 103

STR#:84 and 102

STR#:83 and 101

STR#:82 and 100

STR#:81 and 99

Oak Street Park

N

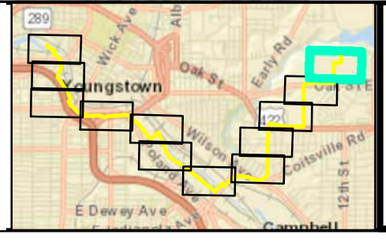
0 100 200 400 Feet

LEGEND:

- Existing Substation
- Structures
- Access Entrance
- Proposed Route
- Temporary Access Roads
- Proposed Right-of-Way (65-ft Corridor)
- National Register Listing (OHPO)
- National Register Determinations of Eligibility (OHPO)
- Cemetery (OHPO)
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- Monument
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- Non GPS Well
- Church
- School
- Stream (National Hydrography Dataset)
- Sensitive Land Use/Parks
- Land Bank Parcel
- National Wetland Inventory Area
- City Owned Parcel

Land Use Type

- Commercial
- Industrial
- Institutional
- Park
- Residential



Source: BMCD, ESRI, ARCGIS Online World Street Map

ATSI

FIGURE 3-3
PRELIMINARY CONSTRUCTION AND ACCESS MAP
SHEET 12 OF 12

YOUNGSTOWN 138KV REINFORCEMENT TRANSMISSION LINE

X:\DCS\Projects\IMS\FIRSTENERGY\OHIO_Projects\60959583_FE_RVBLPK3924_Silion\1_MXD\3_OPSB_Maps\20250822_OPSB_FINAL\OPSB_Figure3-3_Preliminary_ConstructionandAccess_Map.mxd

4906-4-04 PROJECT AREA AND SITE DESIGN

(A) Project Area

ATSI and its siting team conducted an independent RSS for the transmission line proposed in the Project. A copy of the RSS is included as **Appendix 4-1**. The goal of the RSS was to identify reasonable routes, while avoiding or minimizing effects on sensitive land uses, ecological, and cultural features in the Project Area with the ultimate objective being the identification of a Proposed Route for the Project that met all applicable criteria for issuance of a Certificate by the Ohio Power Siting Board (OPSB). Potential routes were quantitatively and qualitatively evaluated, compared, and ranked to provide the basis for the selection of a Proposed Route.

Prior to beginning the Study, certain key objectives were identified as the minimum criteria needed to achieve the Project goals. These objectives included identifying:

- Route alternatives must connect the existing Lincoln Park Substation and Riverbend Substation;
- Route alternatives must support a 65-foot wide, cleared ROW;
- Route alternatives must be able to support conductor, insulators, and other hardware required by ATSI;
- Route alternatives must be able to have appropriate rights and permits secured to support an in-service date in December 2028;
- Route alternatives should attempt to eliminate significant backtracking through the Project area; and
- Route alternatives should attempt to minimize the number of major corridor crossings, including major highways, railroads, and the Mahoning River.

(A)(1): The Project is predominantly located within the City of Youngstown with a portion crossing the City of Campbell in northeastern Mahoning County, Ohio. The Project Area is primarily urban with high-density residential, commercial, and industrial development. The urban nature of the Project Area presents significant routing constraints due to potential building encroachments. The Mahoning River is a prominent waterbody in the area.

ATSI considered geographic features such as existing utility corridors and municipal boundaries, direction given in the Opinion, Order and Certificate of OPSB Case No. 19-1871-EL-BTX to propose a solution that avoids Wean Park and the Covelli Center, as well as applying professional judgment, to define a focused Project area. The delineation of the study area was driven by the identification of start and end points for the new electric transmission line. The new 138 kV transmission line is anticipated to originate from the existing Lincoln Park Substation and the endpoint is fixed at the existing Riverbend Substation. It is a best practice to limit the Study Area in the opposite direction from the direct path between the start and end point to prevent backtracking.

(A)(2): Figure 1 and Figure 2 of the RSS (**Appendix 4-1**) illustrates the approximate boundary of the Study Area and potential candidate route segments.

(A)(3): The list and description of all quantitative siting criteria as well as the weighting values for each criterion utilized in the RSS are presented in **Table 1** of the RSS report (**Appendix 4-1**). The quantitative siting criteria consist of constraint and attribute data, including, but not limited to, locations of individual residences, property boundaries, institutional land uses, forested lands, wetlands, streams, existing transmission lines, and other land use features. These criteria were assigned weighting values based on the professional judgment of the siting team, which allowed for the calculation of final route scores.

Sensitive areas identified in the RSS included residential parcels, a church, a cemetery, historic structures and places, and ecological resources. The Study Area is primarily a residential and industrial setting, with some rural parcels near the eastern portion of the area. Anticipated impacts to cultural resources did not significantly limit the placement of route alternatives. Ecologically sensitive areas include the Mahoning River, specific locales of streams, wetlands and forest habitat throughout the Study Area.

(A)(4): After the Study Area and siting criteria were established, preliminary routes were drawn based on the results of the map analysis, review of aerial photography, topographic maps, and the mapped attribute and constraint data. The intent when placing these working centerlines, 65 in total, was to minimize impacts. Of the 65 initial segments, 30 segments were removed from consideration due to impacts to sensitive resources, connectivity to removed segments, or constructability flaw was identified. Of the remaining 35 segments, a total of 36 potential candidate routes were identified. To reduce the number of candidate routes to a focused set of alignments, the quantitative results were combined to develop preliminary ranking and the remaining top 10 overall scoring routes were continued for further analysis.

Various siting criteria were quantified for each route and then each quantified value was normalized to assign each criteria a suitability value based on a scale of 0 (most suitable) to 100 (least suitable). This makes the data simpler to compare and removes inadvertent weighting of the information. Normalizing the data into a score is vital so that all of the constraints are directly compared according to the same scale. ATSI's siting team identified weighting factors for each siting criteria category (ecological, cultural resources, land use, and technical). The various RSS route alternatives (combinations of selected route segments) were then numerically scored to identify the overall top-ranked route alternatives.

In addition to quantitative scoring, ATSI's siting team, relying on its experience and familiarity with siting major transmission line Projects, further refined the routes based on qualitative factors. A combination of qualitative factors, route scoring, public input, and engineering design/ constructability were ultimately all used to determine Proposed Route. The entire siting process, methodology, and results are described in detail in the RSS report in **Appendix 4-1**. The information provided throughout this application is based on the final alignments of the Proposed Route, after the constructability review was completed.

The Proposed Route is identified as Route 25 (1-1B-2-12-22-26-36-39-40-48-49-54-55-59) in the RSS. The route is approximately 6.25 miles long and ranked 4th overall out of the top 10 routes scored based solely on the quantitative factors. It had the best ranked route for ecological and cultural resources due to avoidance of forested areas associated with Lincoln Park and being mostly located within industrial developments on the South side of the Mahoning River. Route 25 had the 7th ranked constraint for land use due to additional parcels crossed and second lowest ranking (9th) for engineering due to overall length and turn angles. The opportunity presented with this route was avoidance of impacting additional landowners along woodland avenue by utilizing the ODOT's ROW as well as avoidance of a sensitive place of worship, placement of route within a landfill/junkyard area, and avoids Lincoln Park by utilizing the Mahoning River crossing near the Center Street bridge.

(A)(5): ATSI conducted a public information program to raise awareness, communicate Project details, and seek feedback from residents and local elected officials. Part of the public engagement program involved conducting two public information meetings (PIM; open house forum) in the area to seek feedback from the community on the Project and the routes being considered. Prior to the PIM, ATSI mailed invitation letters to residents and tenants, and published a newspaper public notice of the PIM. A Project website was created with Project mapping and a summary description. At the public information open house, ATSI representatives were available to answer questions, listen, and receive feedback from the public to incorporate in the siting process.

ATSI conducted its first informational meeting on June 12, 2024, at the Tyler History Center in Youngstown, Ohio. Detailed maps of the group of study segments identified by the RSS provided in **Appendix 4-1** were presented throughout the meeting. Property boundaries were also indicated on the mapping with the unique parcel identification numbers referenced to an ownership spreadsheet. Approximately 29 people attended the PIM. Most of the attendees voiced opposition to Route Alternative Options B and C. Opposition to Option B was due to the proximity to a few scattered residences along that alignment. Several of these attendees were affiliated with a church along Route Alternative Option C and voiced opposition to the alignment going alongside of the property, as well as potentially opening up part of the forest in Lincoln Park as a result of the potential transmission line corridor. Following the public meeting, the Applicant continued its evaluations of the alternative options route to assess comments received and adjust the options where applicable.

ATSI conducted its second informational meeting on June 4, 2025, at the Tyler History Center in Youngstown, Ohio. Information similar to the first meeting was presented with the information received from the first meeting incorporated where possible. Approximately 16 people attended the meeting. The common, Proposed, and alternative route options were presented to the public. Overall, attendees favored the Proposed alignment. No comment cards or specific questions have been received from FirstEnergy as of August 2025.

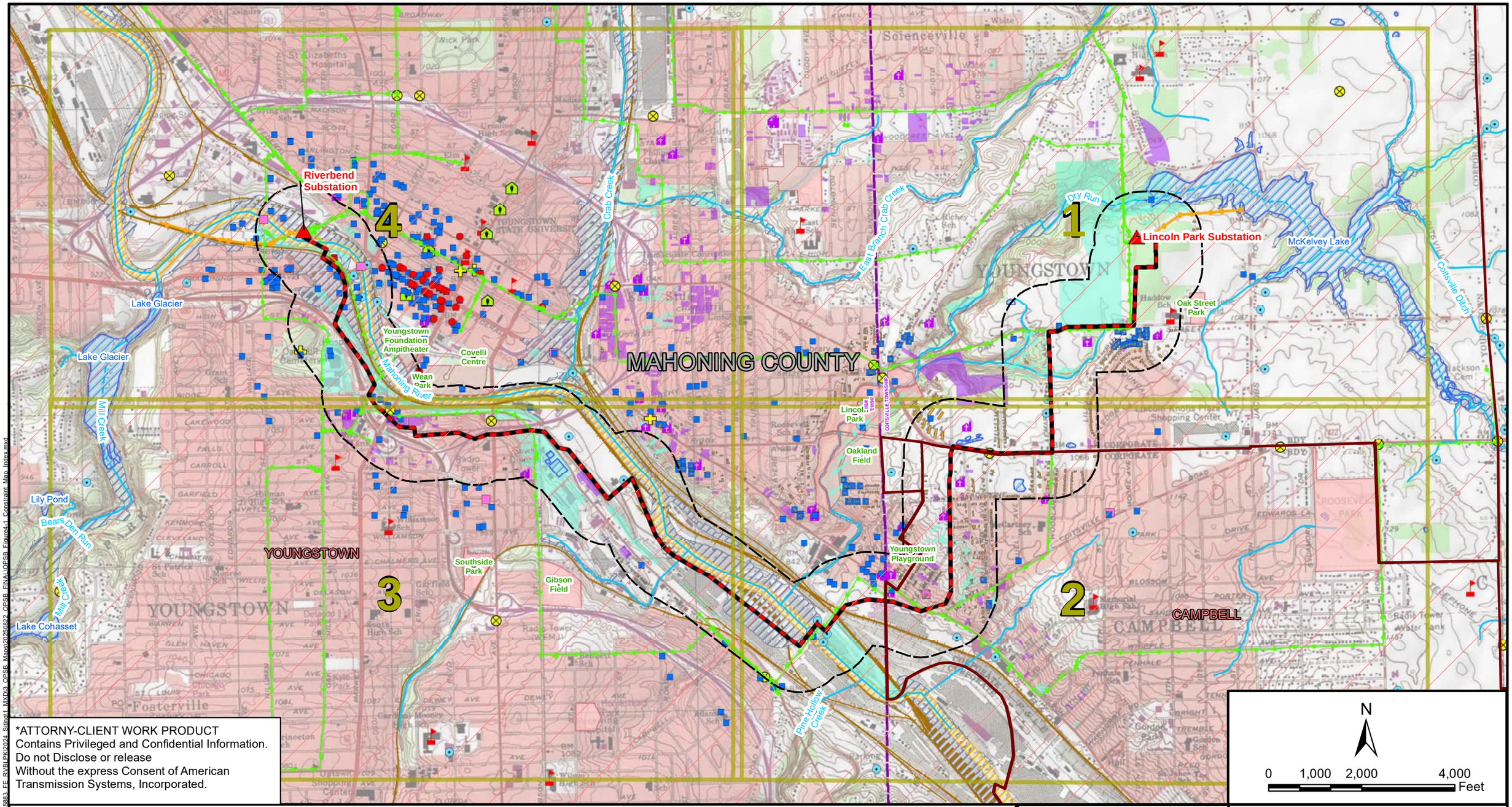
Copies of the open house materials provided at the June 12, 2024 and June 4, 2025 public meetings are provided in **Appendix 6-2** and **6-3**, respectively. Further information regarding public involvement is further detailed within **Section 4906-4-06**.

(B) Generation Facility Layout Design Process

(B)(1)(2): This requirement is inapplicable because the Project is an electric transmission line and not a generation facility.

(C)(1): Figure 4-1 illustrates the candidate routes and constraints used for the design of the routes such as setbacks from residences, property lines, utility corridors and public ROW, as well as other constraints.

(C)(2): Tables 2A, 2B, and 3A through 3E of the RSS Report (**Appendix 4-1**) provide scoring and ranking results for segment and route alternatives. This table includes the individual category scores (ecological, cultural resources, land use, and technical) for each route alternative and the corresponding relative rank of each.



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Transmission Systems, Incorporated.

LEGEND:

- Existing Substation
- Proposed Route
- Stream (National Hydrography Dataset)
- Railroads
- Project Study Area 2,000' Route
- National Register Listing (OHPO)
- Historic Structure (OHPO)
- National Register Determinations of Eligibility (OHPO)
- Cemetery (OHPO)
- Museum
- Monument
- Well
- WELLS_NONGPS
- Church
- School
- Residence
- Sensitive Land Use/Parks
- Parcel Owned by City
- Land Bank Parcel
- Slopes Greater than 12 Percent
- NFHL 100-Year Floodplain (FEMA)
- NFHL Floodway (FEMA)
- Sheet Index Boundary
- Township Boundary
- City or Town
- County Boundary

ATSI

FIGURE 4-1
CONSTRAINT MAP INDEX

YOUNGSTOWN 138KV REINFORCEMENT
TRANSMISSION LINE

Source: BMCD, ESRI, ARCGIS Online World Street Map

X:\DCS\Projects\MSI\FIRSTENERGY\OHIO_Projects\60696883_FE_RVBLBK\2024_Siting\1.MXD\3_OPSB_Maps\20250922_OPSB_FINAL\OPSB_Figure1-1_Constraint_Map_Index.mxd

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Dry Run

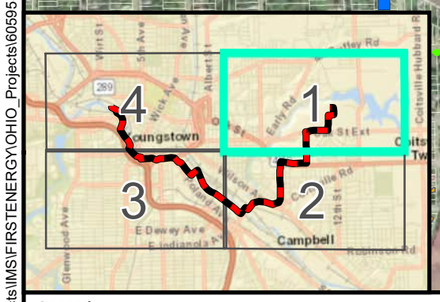
Lincoln Park Substation

McKelvey Lake

East Branch Crab Creek

Oak Street Park

Lincoln Park



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Legend

- Substation
- Existing 23 kV Subtransmission Line
- Existing 138 kV Transmission Line
- Proposed Route
- Railroads
- Proposed Right-of-Way (65-ft Corridor)
- Project Study Area 2,000'
- Historic Structure (OHPO)
- National Register Listing (OHPO)
- National Register Determinations of Eligibility (OHPO)
- Cemetery (OHPO)

Mahoning County Data

- Museum
- Monument
- Well
- Church
- School
- Stream (National Hydrography Dataset)
- Residence
- National Wetland Inventory
- Slopes Greater than 12 Percent
- Sensitive Land Use/Parks
- Land Bank Parcel
- NFHL 100-Year Floodplain (FEMA)
- NFHL Floodway (FEMA)
- Parcel Owned by City
- Parcel Boundary

N

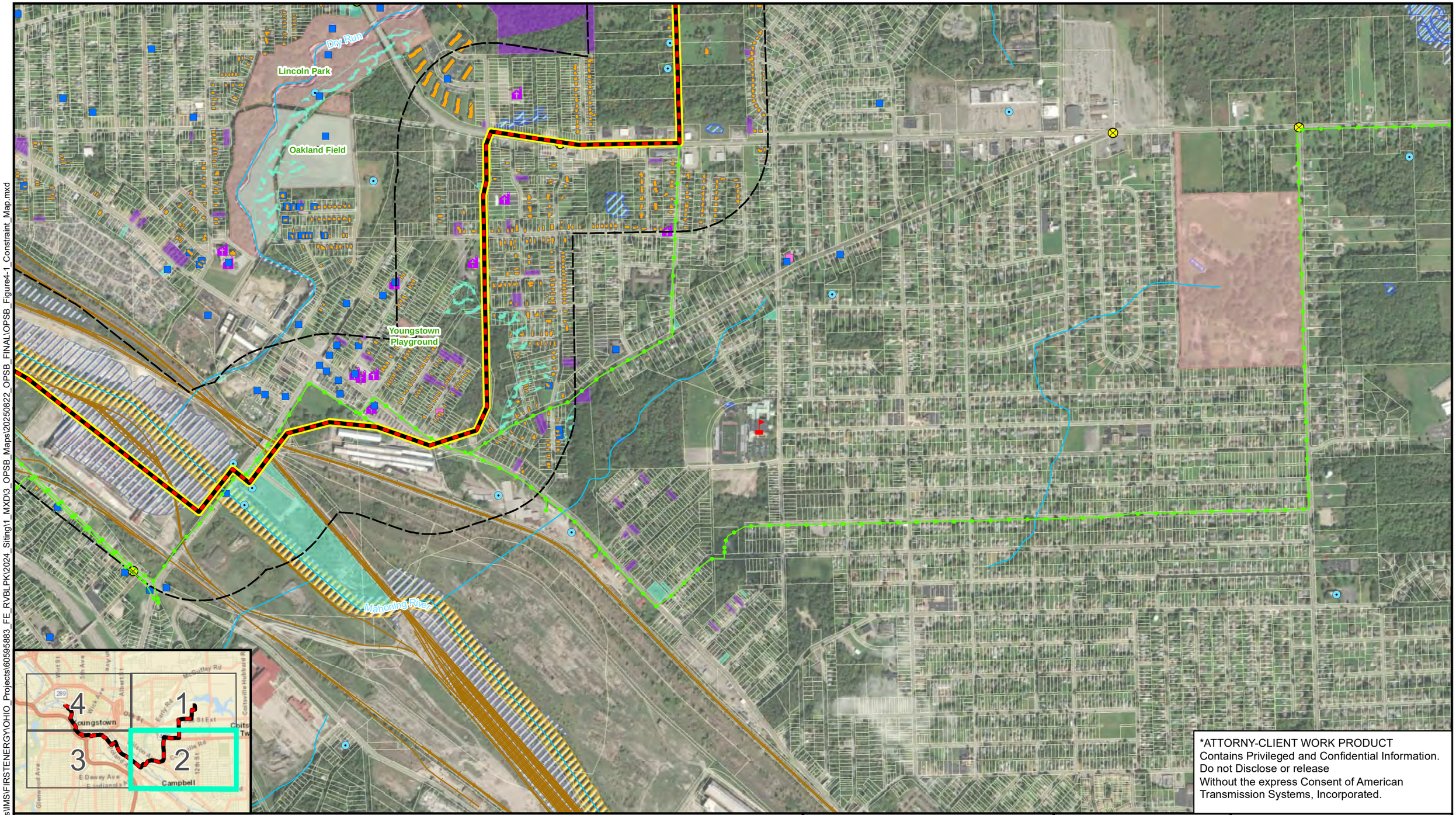
0 300 600 1,200 1,800 Feet

ATSI

Figure 4-1
Constraints Map
Youngstown 138kV Reinforcement
Transmission Line Project
Page 1 of 4

Source: BMCD, ESRI, Mahoning County Auditor, USGS, OHPO, ArcGIS Online Bing Map Hybrid

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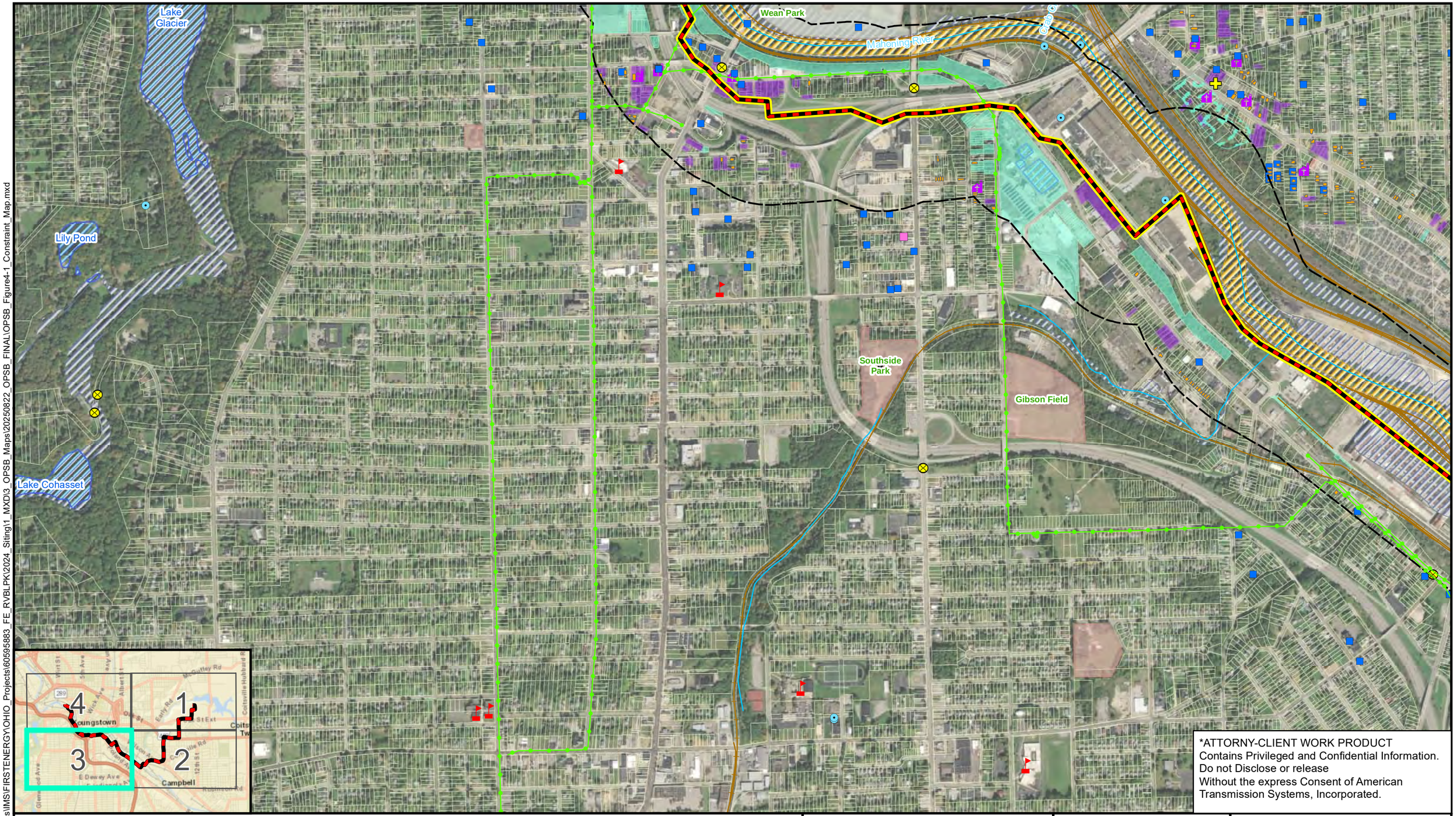
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Figure 4-1
Constraints Map
Youngstown 138kV Reinforcement
Transmission Line Project
Page 2 of 4

Source: BMCD, ESRI, Mahoning County Auditor, USGS, OHPO, ArcGIS Online Bing Map Hybrid

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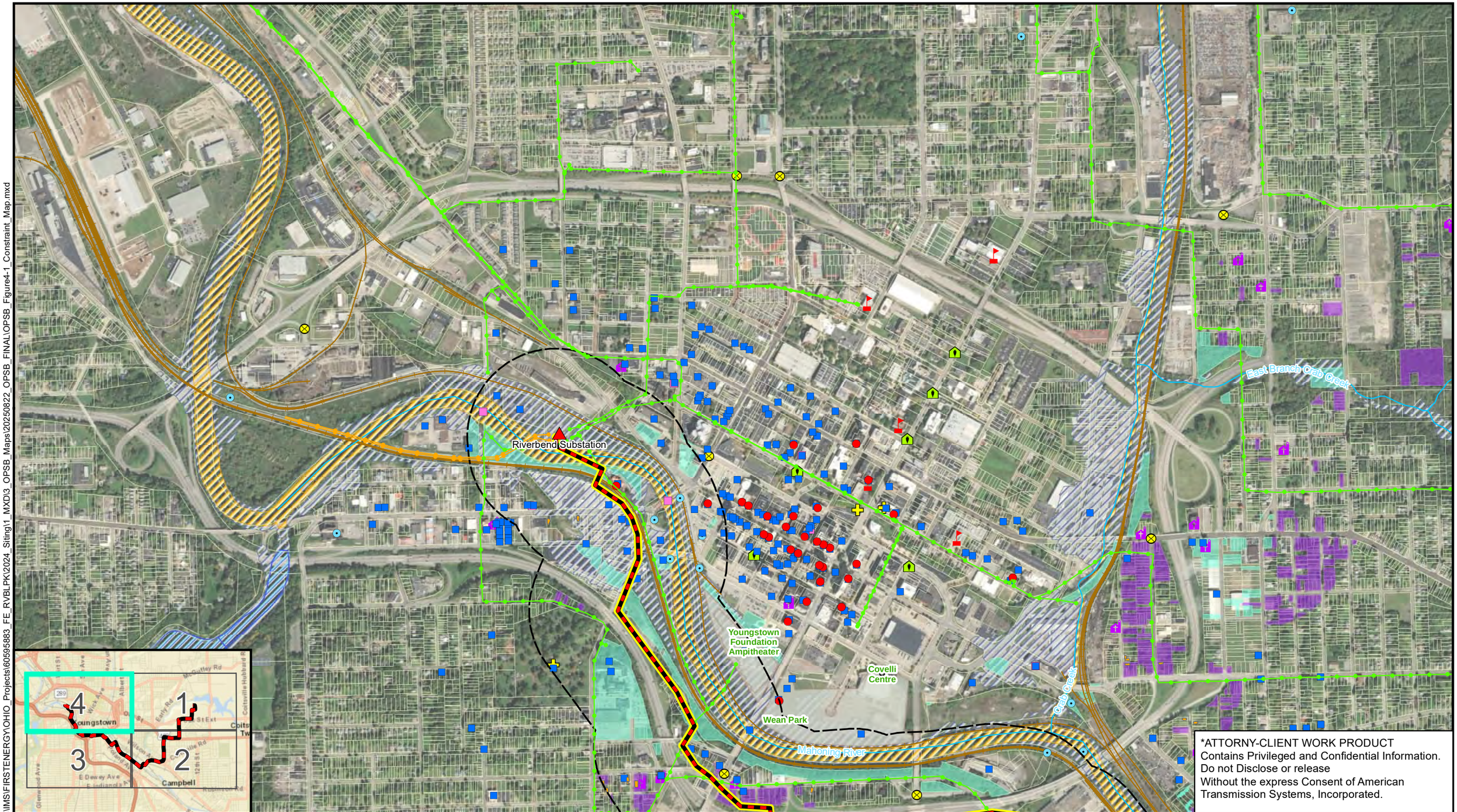
ATSI

Figure 4-1
Constraints Map
Youngstown 138kV Reinforcement
Transmission Line Project
Page 3 of 4

Source: BMCD, ESRI, Mahoning County Auditor, USGS, OHPO, ArcGIS Online Bing Map Hybrid

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0 300 600 1,200 1,800 Feet

ATSI

Figure 4-1
Constraints Map
Youngstown 138kV Reinforcement
Transmission Line Project
Page 4 of 4

Source: BMCD, ESRI, Mahoning County Auditor, USGS, OHPO, ArcGIS Online Bing Map Hybrid

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PROPOSED YOUNGSTOWN 138 KV REINFORCEMENT TRANSMISSION LINE PROJECT

ROUTE SELECTION STUDY

Prepared for:

American Transmission Systems, Incorporated
a FirstEnergy Company
341 White Pond Drive
Akron, Ohio 44320

Prepared by:

525 Vine Street, Suite 1800
Cincinnati, Ohio 45202

Project #: 60708204

April 2025

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1.0 Introduction

This document presents the Route Selection Study ("Study") for a proposed 138 kV electric transmission line located in Mahoning County, Ohio. The Study is a route selection evaluation, conducted by AECOM Technical Services, Incorporated. ("AECOM"), in consultation with American Transmission Systems, Incorporated ("ATSI"), a FirstEnergy company.

ATSI is proposing to construct a new 138 kV electric transmission line called the Youngstown 138kV Reinforcement Transmission Line ("Project"). The Project will extend from the existing Lincoln Park Substation, which is located east of the City of Youngstown to the existing Riverbend Substation, which is located west of the City of Youngstown, (See Figure 1).

As a 138 kV electric transmission line project greater than two miles in length, the Project is subject to review and certification by the Ohio Power Siting Board (OPSB) under Ohio Revised Code (ORC) Chapter 4906: Power Siting. ORC 4906-3-05 Alternatives in Standard certificate applications states:

> *All standard certificate applications for electric power transmission facilities and gas pipelines shall include fully developed information on two sites/routes... Each proposed site/route shall be designated as a preferred or an alternate site/route. Each proposed site/route shall be a viable alternative on which the applicant could construct the proposed facility. Two routes shall be considered as alternatives if not more than twenty per cent of the routes are in common. The percentage in common shall be calculated based on the shorter of the two routes. Any segment of a route that makes use of existing transmission structures or is entirely within existing transmission rights-of-way may be excluded from the calculation of the percentage in common.*

Therefore, based on the ORC governing the Project, Preferred and Alternate Routes must be selected.

2.0 Purpose and Objectives

Prior to the beginning of the Study, certain key objectives were identified as the minimum needed to adhere to the following criteria:

- Route alternatives must connect the existing Lincoln Park and Riverbend substations;
- Route alternatives must support a 65-foot wide cleared right of way (ROW);
- Route alternatives must be able to support conductor, insulators, and other hardware required by ATSI;
- Route alternatives must be able to have appropriate rights and permits secured to support an in-service date of December 15, 2028;
- Route alternatives should attempt to eliminate significant backtracking through the Project area;
- Route alternatives should attempt to minimize the number of major corridor crossings including major highways, railroads, and the Mahoning River;
- Route alternatives must avoid the Youngstown Foundation Amphitheater, Wean Park, and the Covelli Center properties[1]; and
- To the extent practicable, the route selection study will take into consideration future development plans (if present and provided by City of Youngstown) within the Study Area.

Based on these criteria, the route evaluation study provides a process to compare opportunities and constraints between alternative transmission line route for the Project with with the goal to develop a transmission line route that either avoids or minimize adverse effects to ecology, land-use, cultural, and/or engineering or constructability issues within the Study Area.

3.0 Methodology

The iterative methodology of the Study is consistent with standard industry practice and designed to identify transmission line routes that minimize the overall impacts on ecology, land uses, cultural, and engineering aspects to the greatest extent possible, while taking into account economic and technical feasibility. This process relies on a detailed review of land use and ecological data collected from multiple public sources and commercial providers, which is confirmed and supplemented through field evaluations by trained specialists from AECOM and ATSI. The field evaluation allows verification of data and make adjustments based on existing site conditions to be included within quantitative and qualitative assessment of route alternatives.

[1] Coordination with the City of Youngstown identified that the areas of the Youngstown Foundation Amphitheater, Wean Park, and Covelli Center as a contention area that would not be permitted for utility line development.

The result of this process is compiled and summarized into a detailed and comprehensive assessment of the study area and route alternatives. The data and analysis in the Study are presented in a format that equally allows consideration and comparison of additional route concepts and alternatives in response to public input or inquiries from government agencies, if any.

The Study consists of a multi-stage suitability analysis that identifies areas of opportunity and constraint and then directly compares the resultant feasible route candidates to assess possible routes. The Study is comprised of three main steps:

- Definition of a study area;
- Assignment of segment and route candidate centerlines based on detailed ecological, cultural, engineering, and land use criteria;
- Scoring and ranking of route candidates, based on a 65-foot wide right-of-way, to guide selection of the route to be constructed.

4.0 Study Area Delineation

An initial task in the Study was the definition of the study area. The study area was selected based on professional judgment and the geographic characteristics of the region, as well as the physical start and endpoint of the Project. In general, and in accordance with industry practice, a study area for a transmission siting project should be within reasonable distance of the end points of the transmission line and it should provide the opportunity to identify multiple potentially feasible transmission line routes for further evaluation. In this case, the boundaries of the study area were developed based on a review of United States Geological Survey (USGS) maps, state and county road maps, and aerial photographs, as shown on **Figure 1**. Constraints such as major water bodies, urban/developed areas, transportation routes, existing utility corridors, and the locations of the end points played key roles in determining the boundaries of the study area and route candidate selections.

In this case, the identification of the study area was driven by the identification of start and end points for the new electric transmission line. The Project will extend from the existing Lincoln

Park Substation, which is located east of the City of Youngstown to the existing Riverbend Substation, which is located west of the City of Youngstown.

5.0 Siting Criteria for Detailed Candidate Evaluations

The goal of the Study was to identify viable routes based on reasonable physical placement of the new transmission line that avoid or limit impacts to sensitive land uses, ecological, socioeconomic, and cultural features in the study area. In evaluating the siting criteria, it is standard industry practice to maximize certain criteria along a given route, for instance, paralleling existing corridors to minimize new impacts. These more favorable criteria are known as opportunities. Undesirable siting criteria, such as residences, wetlands, and historic properties, are generally referred to as constraints. Therefore, the goal of a routing Study is to maximize opportunities while minimizing constraints. The criteria used in this Study, which are consistent with the criteria used in similar routing studies, are listed below in Table 1.

Table 1: Quantitative Siting Criteria

Criteria*	Data Source
Ecological	
Area of Woodlots within 65-foot Right-of-way (acres)	Woodlots as digitized from aerial photography
Area of National Wetland Inventory (NWI) Wetlands within 65-foot Right-of-way (acres)	NWI wetland areas as identified by United States Fish and Wildlife Service (USFWS)
Number of Stream Crossings	National Hydrology Dataset (NHD) stream flowlines by United State Geological Survey (USGS)
T&E Composite	
Threatened and Endangered Species Listings within 65-foot Right-of-way (60% of composite score)	Ohio Department of Natural Resources (ODNR) Natural Heritage Database
Threatened and Endangered Species Listings between 65-foot Right-of-way and 1,000 feet (25% of composite score)	Ohio Department of Natural Resources (ODNR) Natural Heritage Database
Protected Species Listings between 65-foot Right-of-way and 1,000 feet (15% of composite score)	Ohio Department of Natural Resources (ODNR) Natural Heritage Database

Table 1: Quantitative Siting Criteria	
Criteria*	**Data Source**
Cultural	
National Register of Historic Places and Districts within 1,000 feet of center line	Ohio Historic Preservation Office (OHPO) online database
Known Archaeology Sites within 100 feet of center line	OHPO online database
Ohio Historic Inventory Structure within 1,000 feet of center line	OHPO online database
Cemeteries within 100 feet of center line	OHPO online database and field observation
Land Use	
Residences Composite	
Residences within 32.5 feet (50% of composite score) of center line (65-ft Right-of-way)	Aerial photography, Mahoning County auditor data, and field observation
Residences between 32.5 and 100 feet (30% of composite score) of center line	Aerial photography, Mahoning County auditor data, and field observation
Residences between 100 and 1,000 feet (20% of composite score) of center line	Aerial photography, Mahoning County auditor data, and field observation
Non-residential buildings within 65-foot ROW	Aerial photography, Mahoning County auditor data, and field observation
Properties Crossed by Centerline	Mahoning County Auditor
Institutions Composite	
Linear feet of Institutional Land Uses Crossed (67% of composite score)	Schools and places of worship - USGS maps, Mahoning County Buildings and Parcel Data backchecked with ESRI GIS data layer, and field observation
Institutional Land Uses within 1,000 feet (33% of composite score)	Schools and places of worship - USGS maps, Mahoning County Buildings and Parcel Data backchecked with ESRI GIS data layer, and field observation
Other Sensitive Land Uses Composite	
Other Sensitive Land Uses Crossed (67% of composite score)	Includes airports, air strips, parks, preserves, park district property, designated managed areas, conservation and observatory sites, libraries, and golf courses; sources: US Forest Service, ODNR, Mahoning County auditor data, ESRI GIS data, and field observation

Table 1: Quantitative Siting Criteria	
Criteria*	**Data Source**
Other Sensitive Land Uses within 1,000 feet (33% of composite score)	Includes airports, air strips, parks, preserves, park district property, designated managed areas, conservation and observatory sites, libraries, and golf courses; sources: US Forest Service, ODNR, Mahoning County auditor data, ESRI GIS data, and field observation
Engineering	
Number of Public Road Crossings	Mahoning County auditor data, aerial photography, USGS topographic maps
Number of Railroad Crossings	Mahoning County auditor data, aerial photography, USGS topographic maps
Turn Angles Greater than 0 and Less than 20 Degrees	Calculated by GIS software
Turn Angles Greater than 20 Degrees	Calculated by GIS software
Number of Highway Overpass Crossings	Mahoning County auditor data, aerial photography, field observation
Percent of Route Closely Paralleling Electric Right-of-way	Aerial photography
Percent of Route Closely Paralleling Public Roads	Aerial photography
Length of Route (miles)	Calculated by GIS software

*65-ft ROW indicates 32.5 feet on each side of the centerline with a total width of 65 feet wide
Within 100 feet of centerline indicates 100 feet on each side of the centerline with a total width of 200 feet wide
Within 1,000 feet of centerline indicates 1,000 feet on each side of the centerline with a total width of 2,000 feet wide

In addition to the ecological, land use, cultural, and engineering opportunities and constraints, several qualitative factors were considered. These include construction and maintenance access, schedule, and likely right-of-way availability along the routes.

6.0 Candidate Segment and Route Scoring Rationale

Although there are numerous methods available for route selection studies, ranging from purely quantitative to purely qualitative, industry practice in Ohio typically relies on both quantitative and qualitative factors to achieve a greater balance between opportunities and constraints across unique siting circumstances. In this Study, a system of numeric data collection, grouping (to simplify), and scoring was chosen to aid comparison and ranking. A subsequent qualitative evaluation was applied to the quantitative ranking to compare the candidate routes to determine the final ranking.

The route alternatives were compared by developing a ranking system based on the impacts of each route on the standard siting criteria (constraints and opportunities) used routinely by ATSI and the industry in general. Each criterion for every route was measured, normalized, and scored as described in the following sections. After the attribute table was completed, the route candidate scores were totaled, routes ranked by total score, and finally the appropriate qualitative factors were considered to identify the candidate route with the fewest overall impacts.

Numerical scoring of the routes was conducted according to the following steps.

Assembly of "Raw" Route Data: Scoring was completed for each of the identified potential candidate segments and combined routes. Where appropriate, attributes crossed by the new Project centerline were measured. Residences, National Register of Historic Places, as well as institutional and other sensitive land uses, were considered out to 1,000 feet from centerline of segment or route to reflect aesthetic impacts. The various other ecological, land use, cultural, and engineering constraints were measured either as linear feet crossed by the centerline or as an attribute count within an appropriate corridor.

Data Normalization: In order to assign scores, the data was normalized so that each constraint could be directly compared according to the same, non-dimensional scale. The formula used to normalize each constraint in the Study was:

$$\textbf{Normalized Score} = ((X_{I\,J}\text{-Min Value }_J)/\text{Range})*100$$

*where I= x^{th} value in constraint and J= constraint

Using the data range for each attribute to normalize the score has two advantages. First, all the constraints were scored out of 100 and were therefore directly comparable. Second, the relative distribution of the data within each constraint was maintained, i.e., there was no unnecessary grouping of the data.

Totaling Attributes to Find Route Score: The weighting factors are selected for each project based on the characteristics of the study area, as well as both ATSI's and AECOM's previous experience in siting linear utility facilities in similar settings. Given the high importance of both ecological and land use considerations, these two categories were given the highest weighting. For

this Project, ATSI and AECOM applied a weighting factor of: (a) land use matters – 40%; (b) ecological matters – 40%; (c) cultural matters – 10%; and (d) engineering matters – 10%.

7.0 Identification of Initial Candidates Routes Segments

Based on the identified needs and technical requirements of the Project, the study area was evaluated to identify candidate routes. A constraint map of the study area was developed using ArcMap GIS software. Georeferenced data layers for the identified constraints, obtained from published State and Federal materials and local planning documents, were superimposed on available aerial photography. A windshield survey of the study area was conducted to verify the nature of the study area and identify possibly important constraints that were not included in the GIS layers. Based on the resulting constraint map, initial candidate segments were identified within the Project Study Area. Candidate segments are study segments of partial alignments that when combined form a complete route. A vicinity map, showing all 65 candidate segments, is shown as **Figure 2**. A discussion of all 65 candidate segments are provided below.

1: Segment 1 exits Riverbend Substation and crosses the Mahoning River and a railroad track on parcel owned by Two Bridges LLC located south of Oak Hill Avenue before connecting to Segments 1A and 1B. Following coordination with the railroad company and after the first public open house (June 12, 2024), this segment was revised to cross perpendicular to the railroad. The segment total linear length is approximately 0.24 mile.

1A: Segment 1A was identified as an alternative to Segment 1B that would cross over the railroad near Mahoning Avenue to provide a candidate route connection for a pathway that follows along the edge of the Mahoning River on the north side of the railroad grade by connecting Segment 03 to Segment 05. Segment 1A will be mostly situated within roadway rights-of-way or along the edge of the railroad grade and is approximately 0.10-mile in total length.

1B: Segment 1B was identified to provide an alternative to Segment 1B that doesn't require an additional railroad crossing along Mahoning Avenue and provides a connection to a southern route by connecting directly to Segment 2. Segment 1B

is located on industrial lands or stays on property owned by the railroad company and is approximately 0.12-mile in total length.

2A: Segment 2A connects Segments 1A with Segment 2 that provides alternative option to connect to a southern route that runs parallel to the eastern side of Oak Hill Avenue and crosses Marshall Street. This segment follows completely along the edge of roadway and is approximately 0.05-mile in total length.

2: Segment 2 continues from Segment 1B and 2A intersection towards the south along the eastern edge of Oak Hill Avenue and turns towards the southwest before I-680. The route continues to be within I-680 right-of-way before terminating at the intersection of Segments 5 and 12. Segment 2 will be situated along existing road ROW within commercial, industrial, or forested mixed land use and is approximately 0.42-mile in total length.

3: Segment 3 continues from Segment 01A and Segment 02A intersection and terminates at the intersection of Segments 04 and 05. This short segment crosses Marshall Street on the north side of a railroad track and will be completely within road or railroad ROW on industrial or disturbed lands. This segment is approximately 0.04-mile in total length.

4: Segment 4 runs for approximately 0.11 mile in total length from where Segments 6 and 11 connect to the south of the intersection of Marshall Street and West Front Street to where Segments 3 and 5 connect on a parcel owned by the City of Youngstown, to the east of a railroad track and south of Marshall Street. This segment crosses one parcel owned by the City of Youngstown and the Mahoning River.

5: Segment 5 runs for approximately 0.4 mile in total length from where Segments 2, 10, and 12 connect north of Ridge Avenue, to where Segments 3 and 4 connect to the east of the railroad track on a parcel owned by the City of Youngstown, south of Marshall Street. Most of the segment runs adjacent to and north of a railroad track and south of the Mahoning River. Approximately 0.3 mile of Segment 5

parallels the existing Gibson-Riverbend 23 kV line. This segment crosses the existing railroad track before it ties into the intersection of Segments 2, 10, and 12. Existing distribution lines are identified at the location and may warrant re-location and/or underbuild activities.

6: Segment 6 runs for approximately 0.52 mile in total length from where Segments 4 and 11 connect to the south of the intersection of Marshall Street and West Front Street, east of a railroad, to the Riverbend Substation. This segment transects a commercial and industrial area of development and crosses West Front Street, 5th Avenue, the existing Belmont-Riverbend 23 kV line and a railroad track.

7: Segment 7 runs for approximately 0.14 mile in total length from where Segments 8 and 9 connect on a parcel owned by the City of Youngstown, north of a railroad track and south of the Mahoning River, to the Riverbend Substation. This segment crosses the existing Oak Hill-Riverbend 23 kV line and Riverbend-Salt Springs 138 kV Transmission Line and two parcels owned by the City of Youngstown.

8: Segment 8 runs for approximately 0.44 mile in total length from where Segments 9 and 10 connect on a parcel owned by the City of Youngstown, to the north of Pike Street and a railroad track, to where Segments 7 and 9 connect at the intersection of the existing Riverbend-Salt Springs 138 kV Transmission Line on a parcel owned by the City of Youngstown, north of a railroad track and south of the Mahoning River. This segment transects a commercial and industrial area of development and crosses Oak Hill Avenue, Marshall Street, Mahoning Avenue, and four parcels owned by the City of Youngstown.

9: Segment 9 runs for approximately 0.71-mile in total length from where Segments 8 and 10 connect on a parcel owned by the City of Youngstown, to the north of Pike Street and a railroad track, to where Segments 7 and 8 connect on a parcel owned by the City of Youngstown, north of a railroad track and south of the Mahoning River. This segment runs west for approximately 0.1-mile, crossing through the intersection of Oak Hill Avenue and Pike Street, and crossing I-680.

Segment 9 then turns west-northwest at High Street and parallels High Street for approximately 0.2-mile before turning north. The remaining 0.4-mile of this segment crosses I-680 and two ramps to I-680, Marshall Street, Mahoning Avenue, and a railroad track: 0.2 of the 0.4-mile parallels South West Avenue and North West Avenue. Oak Hill Cemetery is mapped to the south of Segment 9 on the south side of High Street. This segment also crosses four land bank parcels owned by the City of Youngstown Land Reutilization Program, two parcels owned by the City of Youngstown, and the existing Riverbend-Salt Spring 138 kV Transmission Line. Some underbuild of existing lines is likely.

10: Segment 10 runs for approximately 0.27-mile in total length from where Segments 8 and 9 connect north of Ridge Avenue to where Segments 2, 5, and 12 connect to the east of a railroad track on a parcel owned by the City of Youngstown, and east of the intersection of Pike Street and Oak Hill Avenue. Most of this segment runs through a disturbed area near and parallel to railroad tracks. The Mahoning River is mapped to the northeast and east of this segment.

11: Segment 11 runs for approximately 0.35-mile in total length from where Segments 13 and 14 connect on the southwestern portion of a parcel owned by the Youngstown Foundation Amphitheater property, to the east of Market Street, to where Segments 4 and 6 connect to the east of a railroad truck, south of the intersection of Marshall Street and West Front Street. Much of this segment runs adjacent to and north of a railroad track and the Mahoning River, through the southern and western portion on the Youngstown Foundation Amphitheater property. For this reason, Segment 11 was not further considered for the segment analysis.

12: Segment 12 runs for approximately 0.17-mile in total length beginning where Segments 12A and 59 connect just east of the intersection of East Woodland Avenue and Erie Street. The segment crosses from the south of East Woodland Avenue to the north at Market Street Intersection, parallels the on-ramp of I-680 and then turns north to where Segments 2, 5, and 10 connect.

12A: Segment12A runs for approximately 0.09 mile in total length beginning where Segments 13 and 15 connect along East Woodland Avenue. The segment continues from the intersection along the southern edge of East Woodland Avenue until it terminates at Segments 12 and 59.

13: Segment 13 runs for approximately 0.16 mile in total length beginning where Segments 11 and 14 connect on the Wean Park/Covelli Center properties owned by the City of Youngstown. It extends towards the south across the Mahoning River to the intersection of Segments 12A and 15 located along East Woodland Avenue. Due to segment being located on Wean Park/Covelli Center property, this segment was not considered for further analysis.

14: Segment 14 runs for approximately 0.3-mile in total length begins at Segment 16 and continues west on the Wean Park/Covelli Center property by the City of Youngstown to connect to the intersection of Segments 11 and 13. Due to segment being located on Wean Park/Covelli Center property, this segment was not considered for further analysis.

15: Segment 15 runs for approximately 0.30 mile in total length located between intersection of Segments 12A and 13 to Segment 17 that is located completely within East Woodland Avenue. The segment switches from the north to the south of East Woodland Avenue to avoid encroachments of residential buildings and will require underbuild or rebuild of distribution lines along the edge of East Woodland Avenue.

16: Segment 16 runs for approximately 0.07-miles in total length from where Segments 18 and 19 connect in an undeveloped area to the east of South Avenue to where it terminates at Segment 14 located on Wean Park/ Covelli Center property owned by the City of Youngstown. Due to segment being located on Wean Park/Covelli Center property, this segment was not considered for further analysis.

17: Segment 17 continues Segment 15 for approximately 0.07-mile in total length where it terminates at the intersection of Segments 18 and 20. This segment crosses

South Avenue Bridge and is located along the northern edge of East Woodland Avenue.

18: Segment 18 runs for approximately 0.09-mile in total length from where Segments 17 and 20 connect in an undeveloped area on the north side of East Woodland Avenue, cross the Mahoning River, and terminates at intersection of Segments 16 and 19 east of South Avenue Bridge.

19: Segment 19 runs for approximately 0.36 mile in total length and proceeds from Segment 16 and 18 towards the east within undeveloped lands. After crossing a railroad, the line terminates at the intersection of Segments 23 and 24.

20: Segment 20 runs for approximately 0.10-mile in total length and continues from the intersection of Segments 17 and 18 and terminates at intersection of Segments 20A and 21 along the northern edge of East Woodland Avenue. Along the edge of East Woodland Avenue, an existing distribution line would either need to be relocated or underbuilt in order to install a new transmission line segment at this location.

20A: Segment 20A runs for approximately 0.10 mile along the north side of East Woodland Avenue between the intersections of Segments 20 and 21 and Segments 22 and 59. The segment crosses State Route 62 (US-62) and an existing distribution line in this location would either need to be relocated or underbuilt in order to install a new transmission line segment at this location.

21: Segment 21 runs for approximately 2.2-miles in total length from where Segments 26, 36, and 37 connect along South Center Street to where Segments 20 and 20A connect along East Woodland Avenue and Poland Avenue. The first 0.13-mile of this segment parallels South Center Street on the western side and crosses a railroad track. The segment then turns west and parallels a railroad track for 0.35-miles and turns southwest to parallel Caledonia Street. Segment 21 then turns west at Mabel Street and crosses United States Interstate 680 (I-680), running for approximately 0.6-mile parallel to Mabel Street. The remainder of this segment runs for approximately 0.85-mile north and runs parallel to Gibson Street through

residential neighborhoods, crossing I-680, a railroad track, and 18 parcels owned by the City of Youngstown (including a wastewater treatment plant). The final 0.1-mile crosses Gibson Street, State Route 62 (US-62), and Poland Avenue to where Segments 20 and 20A connect. Segment 21 parallels the existing Center-Lincoln Park 23 kV Line for approximately 0.1-mile, the existing Center-Gibson 23 kV Line for approximately 0.7-mile, and the existing Gibson-Riverbend 23 kV Line for approximately 0.6-mile. Underbuild of existing electric lines will be necessary.

22: Segment 22 runs for approximately 0.6-mile in total length from where Segments 25 and 26 connect on the south side of a railroad track, to where Segments 20, 59, and 20A connect along Poland Avenue. Most of the segment is located along an existing private drive (Performance Place) and industrial complex and crosses through a land bank parcel owned by the City of Youngstown Land Reutilization Program.

23: Segment 23 runs for approximately 0.43-mile in total length from where Segments 25 and 27 connect at an undeveloped property on the north side of the Mahoning River and railroad tracks, to where Segments 19 and 24 connect south of Federal Plaza East and west of Wilson Avenue. This segment runs north of the railroad track located southwest of Wilson Avenue adjacent to and paralleling an existing gas pipeline. Segment 23 crosses State Route 62 (US-62) before connecting to Segments 19 and 24.

24: Segment 24 runs for approximately 0.13-mile in total length from where Segments 30 and 33 connect between the two entrance ramps to US-62 along Himrod Avenue to where Segments 19 and 23 connect to an undeveloped area to the east of the railroad track. This segment crosses woodlots and one of the entrance ramps to US-62 and Wilson Avenue.

25: Segment 25 runs for approximately 0.12-miles in total length from where Segments 23 and 27 connects on the north side of the Mahoning River, to where Segments 22

and 26 connect on the south side of the Mahoning River. This segment is characterized by an aerial crossing of the Mahoning River.

26: Segment 26 runs for approximately 1 mile in total length from where Segments 21, 36, and 37 connect along South Center Street to where Segments 22 and 25 connect on an undeveloped parcel owned by Exal Corporation on the south side of a railroad track and the Mahoning River. The entirety of this segment crosses through a rail yard and runs parallel to railroad tracks.

27: Segment 27 runs for approximately 0.62 mile in total length from where Segments 23 and 25 connect on an undeveloped property owned by Niki Datri Enterprises Inc., to where Segments 34 and 35 connect at the dead-end of South Jackson Street, adjacent to the north of a rail yard. Almost the entirety of this segment runs adjacent to an existing gas pipeline and a large portion of the segment is situated along an existing salvage yard/dump.

28: Segment 28 runs for approximately 2.8 miles in total length from where Segments 29 and 31 connect between U.S 62, McHenry Street, and Willow Street and originates at the Riverbend Substation. This segment is the second longest segment and traverses a high-density area of development. Segment 28 has over 20 turns to avoid the surrounding commercial and residential structures. This segment runs west for approximately 0.1 mile through woodlots that are mapped on a parcel owned by the City of Youngstown. The segment then turns north along Willow Street, crossing McHenry Street, and runs approximately 0.3 mile before turning west and running approximately 0.2 mile south of McGuffey Road, crossing a railroad track, Crab Creek, and Andrew Avenue. Segment 28 then turns north, crosses McGuffey Avenue and runs approximately 0.2 mile parallel to Randall Avenue before turning west and traversing through residential neighborhoods along Sycamore Street, Indiana Avenue, Park Avenue, Madison Avenue, and associated cross streets for approximately 0.8 mile. This portion of Segment 28 runs adjacent to the southern boundary of Wick Park for approximately 0.3 mile. The remaining approximately 0.7 mile generally

traverses southward through the residential, commercial, and industrial properties along Griffith Street, Gardner Street, and North West Avenue between Madison Avenue to the Riverbend Substation. Segment 28 parallels several existing 23 kV Lines, including Emerson-Wood 23 kV Line for approximately 0.6 mile, Belmont-Emerson 23 kV Line for approximately 0.2 mile, and Belmont-Salt Springs 23 kV Line for approximately 0.3 mile. Seven parcels owned by the City of Youngstown and 19 land bank parcels owned by the City of Youngstown Land Reutilization Program (15) and the Mahoning County Land Reutilization Corporation (4) are crossed by Segment 28.

29: Segment 29 runs for approximately 0.36-miles in total length, primarily through a residential neighborhood, parallel to Albert Street and Valley Drive from where Segments 30 and 32 connect southwest of the intersection of High Avenue and Albert Street to where Segments 28 and 31 connect in a woodlot on a parcel owned by the City of Youngstown. Approximately 0.1 mile of Segment 29 parallels the existing Emerson-Wood 23 kV Line. This segment crosses the existing transmission line, a land bank parcel owned by the City of Youngstown Land Reutilization Program, East Branch Crab Creek, and US-62.

30: Segment 30 runs for approximately 0.64-miles in total length from where Segments 24 and 33 connect along Himrod Avenue to where Segments 29 and 32 connect southwest of the intersection of High Avenue and Albert Street. The first 0.3 mile of the segment crosses Himrod Avenue and then runs parallel to the existing Emerson-Wood 23 kV Line and North Hine Street. An area of land bank parcels owned by the City of Youngstown Land Reutilization Program is mapped along the west side of North Hine Street. The segment then turns east and runs for approximately 0.2 mile parallel to Oak Street. This portion of Segment 30 crosses North Hine Street, US-62, and North Lane Avenue. The remaining 0.1 mile of Segment 30 then turns northeast and crosses Oak Street at North Fruit Street. Segment 30 crosses seven parcels owned by the City of Youngstown.

31: Segment 31 runs for approximately 1.92 miles in total length, through residential neighborhoods, from where Segments 44 and 46 connect along Early Road to where

Segments 28 and 29 connect in the western portion of a parcel owned by the City of Youngstown. This segment runs west-northwest approximately 0.3 mile, through woodlots and crosses East Branch Crab Creek, before turning to the west and paralleling Stewart Avenue for approximately 0.5 mile. Segment 31 crosses the existing Lincoln Park-Wirt 23 kV Line which runs parallel along Stewart Avenue. This segment then turns south and parallels Lansdowne Boulevard before generally going west. The remaining approximately 1.1 miles crosses primarily woodlots along an unnamed tributary, Victory Field Park, and several side streets. The last 1.1 mile stretch of this segment has eight 90-degree turns to avoid the dense urban development. This segment crosses through three parcels owned by the City of Youngstown.

32: Segment 32 runs for approximately 1.16 miles in total length parallel to the existing Emerson-Wood 23 kV Line, primarily through residential neighborhoods. This segment runs from where Segments 44 and 45 connect at the intersection of Early Road and East High Avenue to where Segments 29 and 30 connect along Albert Street. Segment 32 crosses several local roads, including Lansdowne Boulevard, Karlston Avenue, Euclid Avenue, North Truesdale Avenue, North Garland Avenue, North Pearly Avenue, and Albert Street. This segment also parallels the northern parcel boundary of the City of Youngstown City Dump for approximately 0.1 mile. East High School is also in close proximity.

33: Segment 33 runs for approximately 1.13 miles in total length parallel to the existing Emerson-Wood 23kV Line, primarily through residential neighborhoods. This segment runs from where Segments 42 and 47 connect at the intersection of Oak Street Extension and Early Road, to where Segments 24 and 30 connect along Himrod Avenue at the entrance ramp to US-62. The majority of this segment runs west along Himrod Avenue. Segment 33 crosses the 23 kV line twice and US-62 and two access ramps to US-62.

34: Segment 34 runs for approximately 0.68-mile in total length from where Segments 41 and 42 connect in a woodlot, mapped in Lincoln Park, to where Segments 27

and 35 intersect at the dead-end of South Jackson Street, adjacent to the north of a rail yard. Approximately 0.4 mile of this segment crosses three parcels in the Mill Creek Metro Park system, specifically Lincoln Park. Segment 34 crosses Dry Run creek. This segment parallels Park Drive and Gladstone Street before crossing over Wilson Avenue and South Jackson Street. An underbuild of an existing distribution line will be necessary.

35: Segment 35 runs for approximately 0.33-mile in total length from where Segments 36, 38, and 39 connect west of South Center Street to where Segments 27 and 34 connect along South Jackson Street. This segment crosses Dry Run creek and an industrial property that is mapped adjacent to the north of railroad tracks.

35A: Segment 35A is a new segment added following an engineering revision of Segments 36 and 39 and runs for approximately 0.04 mile in total length between Segment 35 and Segment 36. This portion of route is entirely on railroad property.

36: Segment 36 was initially designed to be located on the west side of South Center Street with a crossing of South Center Street to be completed on the north side of the Mahoning River and railroad areas. After the first open house (June 12, 2024), an additional constructability walk identified an adjustment was required to allow for clearance elevations for the raised portion of South Center Street's bridge as well as avoidance of fills within a junkyard. The adjusted segment runs approximately 0.26 mile and originates at the intersection of Segments 26 and 37 on the west side of South Center Street and crosses South Center Street after the Mahoning River and before the railroad crossing. The route continues on the east side of South Center Street and terminates at the intersection of Segments 35A, 38, and 39 on railroad property. The adjusted alignment was revised within the segment analysis.

37: Segment 37 runs for approximately 1.0 mile in total length, through a rail yard, from where Segments 38 and 53 intersect to the south of a railroad track to where Segments 21, 26, and 36 connect along South Center Street. This segment crosses

the Mahoning River, Pine Hollow Creek, a railroad track, and the existing Center-Lincoln Park 23 kV Line.

38: Segment 38 runs for approximately 0.82-mile in total length, through a rail yard, from where Segments 37 and 53 intersect to the south of a railroad track to where Segments 35A, 36, and 39 connect along South Center Street. This segment crosses a railroad track and the existing Center-Lincoln Park 23 kV Line.

39: Segment 39 was initially designed to originate within the junkyard along the previous Segment 36 and required the crossing of South Center Street to connect to Segments 40 and 51. After the first open house (June 12, 2024), the segment was revised due to adjustment of Segment 36 as well as avoiding the junkyard area situated on Segment 39. The adjusted segment runs approximately 0.35 mile and is situated on the eastern side of South Center Street completely within fallow or industrial developed lands and continues east terminating at the intersection of Segments 40 and 51. The adjusted alignment was revised within the segment analysis.

40: Segment 40 runs for approximately 0.75-miles in total length, primarily through woodlots and residential neighborhoods from where Segments 41 and 48 connect along McCartney Road to where Segments 39 and 51 connect at Wilson Avenue. Segment 40 cuts through the corner of two parcels owned by the City of Campbell and crosses McCartney Road, Gladstone Street, and Wilson Avenue. Segment 40 also crosses the existing Center-Lincoln Park 23 kV Line. An underbuild of existing electric line will be necessary. Challenging terrain is also present along the southern portion of the segment.

41: Segment 41 runs for approximately 0.38 mile in total length from where Segments 40 and 48 connect along McCartney Road (US-422) to where Segments 34 and 42 connect in a woodlot mapped in Lincoln Park. Approximately 0.1 mile of this segment crosses two parcels in the Mill Creek Metro Park system, specifically

Lincoln Park. This segment crosses McCartney Road (US-422) and McCartney Road (non-U.S. highway portion).

42: Segment 42 runs for approximately 0.41-mile in total length, primarily through undeveloped land, from the intersection of Segments 33 and 43 at the intersection of Oak Street Extension and Early Road, to where Segments 34 and 41 connect along McCartney Road. The majority of the segment crosses two parcels in the Mill Creek Metro Park system, specifically Lincoln Park. This segment also crosses an unnamed tributary and Oak Street/U.S. 422. Some challenging terrain is also present.

43: Segment 43 runs for approximately 0.35-miles in total length, primarily through undeveloped land, from where the segment connects to Segment 47 along Oak Street Extension, to where Segments 33 and 42 connect at the intersection of Oak Street Extension and Early Road. Approximately 0.1 mile of this segment crosses a land bank parcel owned by the City of Youngstown Land Reutilization Program. This segment also crosses the existing Emerson-Wood 23 kV Line.

44: Segment 44 runs for approximately 0.46-mile in total length, parallel to Early Road, from where Segments 4 and 9 connect to where Segments 3 and 18 connect at the intersection of Early Road and East High Avenue. This segment crosses the existing Emerson-Wood 23 kV Line which runs parallel to Early Road.

45: Segment 45 exits the Lincoln Park Substation to the south and runs west for approximately 0.75-miles in total length cross-country to Early Road where Segments 32 and 44 connect. Segment 45 crosses two parcels owned by the City of Youngstown, the existing Emerson-Wood and Center-Lincoln Park 23 kV lines, and Dry Run creek.

46: Segment 46 exits the Lincoln Park Substation to the northwest and runs for approximately 0.75-mile in total length cross-country to Early Road where Segments 31 and 44 connect. This segment runs north approximately 0.3-mile paralleling the existing Emerson-Wood and Center-Lincoln Park 23 kV lines,

before turning to the west and running for approximately 0.4 mile through woodlots behind a residential development. This segment crosses Dry Run creek, one parcel owned by the City of Youngstown, and has several crossings of the existing 23 kV lines.

47: Segment 47 runs for approximately 0.32 mile in total length, parallel to Oak Street Extension, where Segments 49 and 54 connect to where the segment connects with Segment 43 along Oak Street Extension. This segment crosses the existing Emerson-Wood 23 kV Line that runs parallel to Oak Street and an unnamed tributary. Segment 47 will require an underbuild of existing electric and communication lines.

48: Segment 48 runs for approximately 0.4 mile in total length from where Segments 49 and 50 intersect along McCartney Road (US-422) to where Segments 40 and 41 connect to the northeast of the intersection of McCartney Road and Keystone Street. Commercial development is mapped to the north of the eastern half of this segment. Segment 48 crosses Camden Avenue. Some communications line underbuilds are likely.

49: Segment 49 runs for approximately 0.49-mile in the total length, parallel to Lamar Avenue, from where Segments 47 and 54 intersect on Oak Street to where Segments 48 and 50 connect at the intersection of McCartney Road and Woodland Avenue. The existing Center-Lincoln Park 23 kV Line runs parallel to this segment and would likely be underbuilt. Lamar Avenue is a narrow corridor with a limited number of homes in close proximity on the west side of the street, which is the same side of the street as the 23 kV Line.

Following the first open house (June 12, 2024), a constructability review identified an adjustment to avoid impacting the existing distribution line that ran along Lamar Avenue by shifting the tie-in of Segment 47, 49, and 54 towards the South. The adjusted alignment was revised within the segment analysis.

50: Segment 50 runs for approximately 0.96 mile in total length, primarily through residential neighborhoods, from where Segments 48 and 49 connect along McCartney Road to where Segments 51 and 52 connect along Wilson Avenue. This segment runs south approximately 0.5 mile, paralleling the existing Center-Lincoln Park 23 kV Line and Woodland Avenue before turning to the southwest and paralleling the same line and Coitsville Road for approximately 0.2 mile. The remaining approximately 0.3 mile of this segment runs south to southwest crossing woodlots. Segment 50 crosses the existing 23 kV Line three times as it runs parallel to Woodland Avenue. This segment crosses through one parcel owned by the City of Campbell. Segment 50 will require an underbuild of existing electric and communications lines.

51: Segment 51 runs for approximately 0.31 mile in total length near Wilson Avenue from where Segments 50 and 52 connect to where Segments 39 and 40 connect. This segment crosses Wilson Avenue, the existing Center-Lincoln Park 23 kV Line, and an industrial property.

52: Segment 52 runs for approximately 0.33-mile in total length, parallel to Wilson Avenue, from where Segments 53 and 58 connect to where Segments 50 and 51 connect. This segment parallels the existing Center-Lincoln Park 23 kV Line for approximately 0.1 mile before crossing the 23 kV line and Wilson Avenue near the intersection of 1st Street. Segment 52 crosses an unnamed tributary on the north side of Wilson Avenue.

53: Segment 53 runs for approximately 0.1 mile in total length from where Segments 52 and 58 intersect along Wilson Avenue to where Segments 37 and 38 connect. This segment crosses undeveloped land and a railroad track. Segment 53 is the second shortest segment.

54: Segment 54 runs for approximately 0.35-miles in total length, parallel to Oak Street, from where Segments 55 and 57 intersect to where Segments 47 and 49 connect at the intersection of Lamar Avenue and Oak Street. This segment crosses through

one parcel owned by the City of Youngstown. Segment 54 crosses the existing Emerson-Wood and Center-Lincoln Park 23 kV lines in two different locations.

Following the first open house (June 12, 2024), a constructability review identified an adjustment to avoid impacting the existing distribution line that ran along Lamar Avenue by shifting the tie-in of Segments 47, 49, and 54 towards the South. The adjusted alignment was revised within the segment analysis.

55: Segment 55 exits the Lincoln Park Substation to the south and runs for approximately 0.49 mile in total length cross-country, paralleling the existing Emerson-Wood and Center-Lincoln Park 23 kV lines. Segment 55 terminates at Oak Street where Segments 54 and 57 connect.

56: Segment 56 exits the Lincoln Park Substation to the east and runs for approximately 2.95 miles in total length to the intersection of McCartney Road and Struthers Liberty Road where Segments 57 and 58 connect. This segment is the longest of the 58 segments. Segment 56 runs east approximately 1.5 miles cross-country, parallel to the existing Lincoln Park-Lowellville 138 kV Transmission Line, crossing Jacobs Road, McKelvey Lake, and Coitsville Hubbard Road, before turning to the south where it runs on the west side and parallel to Coitsville Hubbard Road for approximately 0.70 mile. Segment 56 crosses Coitsville Hubbard Road and continues south on the east side of the road and within the existing 23 kV Line right-of-way for approximately 0.20 mile before crossing back over to the west side of Coitsville Hubbard Road. Segment 56 continues south along the west side and parallel to Coistville Hubbard Road for approximately 0.10 mile before crossing Oak Street and then turning west and paralleling McCartney Road for approximately 0.5 mile. The last 0.7 mile of this segment runs parallel to the existing Campbell-Masury 23 kV Line. Segment 56 crosses Dry Run creek, Coitsville Ditch, and several unnamed tributaries. Jackson Cemetery is mapped to the west of this segment, on the opposite side of Coitsville Hubbard Road, and Coitsville Methodist Cemetery is mapped on the southwest corner of the

intersection of McCartney Road and Struthers Liberty Road to the southwest of the endpoint of Segment 56.

57: Segment 57 runs for approximately 1.5 miles in total length from the intersection of McCartney Road and Struthers Liberty Road where Segments 56 and 58 connect, to where Segments 54 and 55 connect along Oak Street. This segment runs north approximately 0.5-mile cross-country before turning to the west and paralleling Oak Street for approximately 1.0 mile. Oak Street Park is mapped adjacent to the north of this segment. Coitsville Methodist Cemetery is mapped on the southwest corner of the intersection of McCartney Road and Struthers Liberty Road to the southwest of the endpoint of Segment 57.

58: Segment 58 runs for approximately 2.3 miles in total length, primarily through residential neighborhoods, and is the third longest segment. This segment runs from the intersection of McCartney Road and Struthers Liberty Road where Segments 56 and 57 connect to where Segments 52 and 53 intersect on Wilson Avenue. This segment runs south approximately 0.8 mile along Struthers Liberty Road, crossing through two parcels owned by the City of Campbell, before turning to the west and paralleling Whipple Avenue for approximately 1.3 miles. This segment then turns south-southwest and parallels Third Street for approximately 0.2 mile, crossing through a parcel owned by the City of Campbell. Roosevelt Park is mapped to the west of this segment, on the opposite side of Struthers Liberty Road. Two cemeteries, Coitsville Methodist Cemetery, and Temple Emanuel Cemetery are mapped along Struthers Liberty Road, on the opposite side of the street from Segment 58. Additionally, near the intersection of Hyatt and Suthers Liberty Road, Segment 58 crosses between the two portions of the Archangel Michael Greek Orthodox Cemetery.

59: Segment 59 is approximately 0.69 mile in total length that is mostly located within the interchange area of Ohio Division of Transportation (ODOT) property of I-680 and US-62. Due to the proximity of the high-speed interchange with on and off ramps, direct coordination for the design of the segment was coordinated with

ODOT in April 2024. A copy of the ODOT authorization of the segment has been provided in Appendix 1.

As the siting effort evolved, the segments were qualitatively evaluated to identify if any of the segments did not meet the original established purpose and objective of the route analysis or additional constructability reviews indicated potential eliminations or adjustments based on likelihood of impacts on residential, commercial and industrial areas, planned future developments, and natural areas. Of the evaluated 65 candidate segments, 19 segments were removed based on the considerations summarized below. The segments eliminated based on these qualitative and constructability reviews prior to the segment analysis are displayed on **Figure 2** as "Candidate Segments (Eliminated Qualitatively)".

Youngstown Foundation Amphitheater, Wean Park, and the Covelli Center (Eliminations)

Six candidate segments (4, 6, 11, 13, 14, and 16) are situated on either Youngstown Foundation Amphitheater, Wean Park, and/or Covellie Center. Based on coordination with the City of Youngstown, no routes would be approved within these properties and were excluded from the segment analysis.

Encroachments, Feasibility, and Constructability (Eliminations)

Thirteen candidate segments (7, 8, 9, 10, 21, 28, 32, 33, 44, 45, 56, 57, and 58) were eliminated due to extensive residential encroachments identified within the 65-foot ROW, aerial clearance constraint of crossing industrial developments, constructability concerns, and ecological potential for disturbance of excessive wetlands and/or streams. Specific elimination justifications are provided below per candidate segment.

- **Segment 7, 8, 9, and 10**: Detailed engineering and ROW review along Segment 8 noted the need for an approximately 700-foot span across a Pepsi Cola property. This relatively long span and the potential for encroachments within this section suggested difficult ROW acquisition, construction, and maintenance. Segment 9 was also eliminated due to I-680 requiring two crossings that would require large structures due to highway elevations as well as candidate segment location along

the edge of Oak Hill Cemetery. Segment 7 and 10 were eliminated due to the removal of Segment 8 and 9.

- **Segment 21:** Segment 21 was eliminated due to several residential neighborhoods between the industrial development to the south of the Mahoning River and I-680. This segment also requires crossing I-680 in two different locations. Segment 21 would impact a large area of land bank parcels, parcels owned by the City of Youngstown, and would directly impact Youngstown Waster Water Treatment facility property.

- **Segment 28:** This candidate segment crosses several residential neighborhoods with eight identified building encroachments within the 65-foot ROW. Wick Park is also mapped adjacent to Segment 33. Segment 33 is the second longest segment and is engineered with many difficult-to-construct 90-degree turns to avoid surrounding development.

- **Segment 32, 44, and 45:** Segment 32 is primarily residential development along East High Avenue with 23 identified building encroachments within the 65-foot ROW and East High School located on an adjacent parcel to the north. Segment 45 was identified as a high potential for ecological impacts (wetlands, streams, and forestry clearing) as well as steep terrain that would not be feasible for construction. Segment 44 was eliminated due to the removal of Segment 32 and 45.

- **Segment 33:** This candidate segment is located primarily within residential development along Himrod Avenue with 34 building encroachments identified within the 65-foot ROW.

- **Segment 56, 57, 58:** Segment 56 was eliminated because of engineering and construction constraints caused by close proximity to an existing 138 kV transmission line which would potentially require power outages to surrounding areas in order to build the new transmission line. Approximately 0.2 mile of Segment 56 also crosses McKelvey Lake and was eliminated due to additional ecological impacts. Segment 58 is primarily residential development along

Whipple Road, with 64 encroachments within the 65-ft ROW. Segment 58 is also near three mapped cemeteries and Roosevelt Park. Segment 57 was eliminated due to removal of Segments 56 and 58.

8.0 Candidate Segment and Segment Route Analysis Ranking

As a result of the removal of these candidate segments, the quantitative analysis utilizing the methods described in **Section 5** was completed on the remaining 46 candidate segments to identify additional eliminating factors before combining the segments into candidate routes. Based on this analysis, an additional 11 candidate segments (Segments 24, 29, 30, 31, 37, 38, 46, 50, 51, 52, and 53) were removed from consideration of route development as summarized below. A summary of the quantitative candidate segments scores is provided within **Table 2A**. The segments eliminated based on the preliminary candidate segment analysis are displayed on **Figure 2** as "Candidate Segment (Eliminated Quantitatively)".

- **Segment 31**: Segment 31 was identified as having the highest ranking for both ecological and engineering constraints as well as 2nd highest ranking for land use impacts. As any combined route consideration of this segment would be negatively impacted, it was removed from further analysis. The total ranking score to the next closes ranked candidate segment (Segment 50) was over a 10.4-point difference. For these reasons, Segment 31 was removed from consideration for route development.

  Segments 24, 29, 30, and 46 were also removed from consideration due to connectivity to Segment 31.

- **Segment 50:** Segment 50 was identified as having the highest ranking for land use impacts and second highest ecological impact. Similar to Segment 31 (above), any combination of a route utilizing this segment would negatively impact the overall route consideration. The total ranking score to the next closest ranked candidate segment (Segment 40) was over a 12.7-point difference. For these reasons, Segment 50 was removed from consideration for route development.

Segments 37, 38, 52, 52, and 53 were also removed from consideration due to connectivity to Segment 50.

As a result, the remaining 35 candidate segments were combined to generate a total of 36 potential candidate routes. To reduce the number of candidate routes to a focused set of alignments, AECOM combined the quantitative results from the candidate segments to predict the top 10 scoring routes that would be considered further for quantitative route ranking and development. A summary of the segmented candidate route scores and rankings for all 36 candidate routes are provided in **Table 2B** with only the top 10 routes being considered for further evaluation as detailed in **Section 9**, below.

A figure displaying all the candidate segments utilized within this analysis is provided as **Figure 2** and finer resolution aerial photography base maps, showing the candidate segments that were not eliminated, are provided as **Figure 3**.

9.0 Quantitative Route Ranking

As referenced in **Section 8**, AECOM preliminarily ranked the segmented routes to identified the top 10 of 36 candidate routes. For these ten candidate routes, AECOM combined the segments together to form complete routes from start to end point and re-ran the metrics for the quantitative analysis as summarized in the following section.

The results of the scoring of the 10 candidate routes are provided in **Table 3A-E**. Route scores, with the lowest scores considered better, ranged from 22.39 to a high of 38.39 (minimum possible score is 0; maximum possible score is 100). A summary of the ten candidate routes is provided below and specific segment descriptions within the routes provided in **Section 7**.

The best scoring route with the lowest overall score was **Route 30 (1-1B-2-12-12A-15-17-20-20A-22-25-27-34-41-48-49-54-55)**, which received a score of 22.39 out of 100 and is approximately 5.67 miles long. This route received the most favorable engineering rank, 3rd most favorable for cultural score, 5th most favorable for ecological and land use. This route utilizes Riverbend Railroad Avoidance (Segments 1, 1B, and 2), Woodland Avenue Route (Segments 12A, 15, 17, 20, and 20A), the Northern Mahoning Route (Segments 25, 27, and 34); and avoids a large

portion of Lincoln Park by utilizing the McCartney Road route (Segments 41 and 48). Overall, the route quantitatively scored the most favorable route due to decreased amount of turn angles and shortest length for engineering, while still ranked in top 5 for the other metrics (cultural, ecological, and land use). The lower ranked ecological score and land use is associated with portion of route still located within Lincoln Park as well as one church property.

Route 19 (1-1A-2-2A-12-12A-15-17-20-20A-22-25-27-34-41-48-49-54-55) is the 2nd most favorable scoring route with a received score of 22.79 out of 100 and is approximately 5.70 miles long. This route ranked 2nd for engineering, 4th for ecological, 6th for land use, and 7th for cultural. The scoring difference of Route 19 to Route 30 was 0.40 points and displayed approximately 97% commonality. The difference between the routes was only a slight deviation of the Riverbend Railroad Adjustment (Segment 1A/2A versus Segment 1B).

Route 27 (1-1B-2-12-22-25-27-34-41-48-49-54-55-59) is the 3rd most favorable scoring route with a received score of 24.53 out of 100 and is approximately 5.70 miles long. This route ranked 3rd for both cultural and land use, 4th for engineering, and 6th for ecological. The scoring difference of Route 27 to Route 30 was 2.14 and displayed over 88% commonality. The only difference between Route 27 and Route 30 was selection of the ODOT vs. Woodland Avenue Routes (Segment 59 vs. Segments 12A, 15, 17, 20, and 20A).

Route 25 (1-1B-2-12-22-26-36-39-40-48-49-54-55-59) is the 4th overall scoring route with a received score of 24.92 out of 100 and is approximately 6.25 miles long. This route was ranked 1st for both ecological and cultural constraint but 7th for land use and 9th for engineering. The scoring difference between Route 25 and Route 30 was 2.53 points and displayed 51% commonality. This was the highest scoring route with the least amount of commonality with Route 30. There are two large differences between Route 25 and Route 30, which include Route 25 utilizing the ODOT vs. Woodland Avenue Routes (Segment 59 vs. Segments 12A, 15, 17, 20, and 20A) as well as the Southern Mahoning River vs. Northern Mahoning River Routes (Segments 26, 36, 39, and 40 vs. Segments 25, 27, 34, and 41).

Route 22 (1-1A-2-2A-12-22-25-27-34-41-48-49-54-55-59) is the 5th overall scoring route with received score of 26.90 out of 100 and is approximately 5.72 miles long. This route was ranked

7th for ecological, cultural, and engineering constraint and 4th for land use. In comparison to Route 30, Route 22 had an overall difference of score of 4.51 points with a commonality of 85 percent. The difference between Route 22 and Route 30 are the ODOT vs. Woodland Avenue Routes (Segment 59 vs. Segments 12A, 15, 17, 20, and 20A) and Riverbend Railroad Adjustment (Segment 1A/2A versus Segment 1B).

Route 28 (1-1B-2-12-22-25-27-34-42-43-47-54-55-59) is the 6th overall scoring route with received score of 28.81 out of 100 and is approximately 5.49 miles long. This route was ranked 1st for land use, 3rd for engineering, 9th for ecological, and last for cultural. In comparison to Route 30, Route 22 had an overall difference of score of 6.42 points and commonality of 68 percent. The differences represented in Route 28 to Route 30 are ODOT vs. Woodland Avenue Routes (Segment 59 vs. Segments 12A, 15, 17, 20, and 20A) and Lincoln Park Valley vs. McCartney Rd Routes (Segments 42, 43, and 47 vs. Segments 41, 48, and 49).

Route 23 (1-1A-2-2A-12-22-25-27-35-35A-39-40-48-49-54-55-59) is the 7th overall scoring route with received score of 32.11 out of 100 and is approximately 6.13 miles long. This route was ranked 2nd for ecological, 6th for cultural, and last for both land use and engineering. In comparison to Route 30, Route 23 had an overall difference of score of 9.72 points. However, Route 23 displayed more commonality with Route 25 than Route 30 with commonality being at 79 and 65 percent, respectively. In comparison of Route 23 to Route 25, the overall score difference was 7.19 points. These differences represented in Route 23 in comparison with Route 25 are reflected as Riverbend Railroad Adjustment (Segments 1A/2A vs. Segment 1B) and Southern Mahoning River Route vs. Northern Mahoning River with Wilson Avenue Route (Segments 26 and 36 vs. Segments 25, 27, 35, and 35A).

Route 26 (1-1B-2-12-22-25-27-35-35A-39-40-48-49-54-55-59) is the 8th overall scoring route with received score of 33.19 out of 100 and is approximately 6.10 miles long. This route was ranked 2nd for cultural, 3rd for ecological, 8th for land use, and 9th for engineering. In comparison to Route 30, Route 26 had an overall difference of score of 10.8 points. However, Route 26 displayed more commonality with Route 25 than Route 30 with commonality being at 81 and 67 percent, respectively. In comparison of Route 26 to Route 25, the overall score difference was 9.07 points. These differences represented in Route 26 in comparison with Route 25 are reflected

as Southern Mahoning River Route vs. Northern Mahoning River with Wilson Avenue Route (Segments 26 and 36 vs. Segments 25, 27, 35, and 35A).

Route 10 (1-1A-3-5-12-22-25-27-34-41-48-49-54-55-59) is 9th overall scoring route with received score of 33.99 out of 100 and is approximately 5.69 miles long. This route was ranked 2nd for land use, 5th for engineering, 9th for cultural, and last for ecological. In comparison to Route 30, Route 10 had an overall difference of score of 11.6 points. The commonality of Route 10 to Route 30 was 79 percent. The differences represented in Route 10 in comparison with Route 30 are ODOT vs. Woodland Avenue Routes (Segment 59 vs. Segments 12A, 15, 17, 20, and 20A) and Mahoning River Railroad vs. Oak Hill Ave Routes (Segments 01A, 3, and 5 vs. Segments 01B and 2).

Route 18 (1-1A-2-2A-12-12A-15-17-20-20A-22-25-27-35-35A-39-40-48-49-54) is the 10th overall scoring route with received score of 38.39 out of 100 and is approximately 6.10 miles long. This route was ranked 5th for cultural, 6th for engineering, 8th for ecological, and 9th for land use. In comparison to Route 30, Route 18 had an overall difference of score of 16 points. The commonality of Route 10 to Route 30 was 76 percent. The two differences represented in Route 18 in comparison with Route 30 are the Riverbend Railroad Adjustment (Segments 1A/2A vs. Segment 1B) and Wilson Avenue/Gladstone (Segment 35, 35A, 39, 40 vs. Segment 34 and 41).

Following the initial quantitative analysis, ATSI completed additional reviews of the candidate routes for engineering constraints, design, and desktop reviews to verify additional or further constraints prior to the open house. Segment 5 was identified as fatal flaw due to a "pinch point" created between the railroad grade and banks of the Mahoning River. For this reason, Route 10 was the only route with this candidate segment and was not considered for further consideration. No other fatal flaws were identified at this time and the remaining nine routes were further evaluated for consideration.

Due to the surrounding land use associated with urban developments and restricted areas from the City of Youngstown, viable route options were limited due to encroachments of existing residential, commercial, and/or other sensitive resources. Out of the nine remaining routes, Route 30 was is best ranked route in comparison to all routes identified and was utilized as comparison for commonality with other potential viable alternatives. As a result, Route 25 (ranked 4th) was the

closest quantitative score to Route 30 that had the lowest commonality (average of 54%) out of all routes considered.

For these reasons, only the candidate routes segments identified along Route 30 and 25 were recommended for further evaluation as provided in **Figure 4**.

10.0 Selection of the Preferred and Alternate Routes

The routes selected for further evaluation were presented at a public meeting held on June 12, 2024, at the Taylor History Center in Youngstown, Ohio. Detailed maps of the proposed candidate route options were presented for both Route 25 and Route 30 that were displayed to the public as segmented portions of these routes as Common Route (overlapping areas between Route 25 and Route 30), Alternative A (Route 30's Woodland Avenue Segments), Alternative B (Route 25's ODOT Segments), Alternative C (Route 30's Northern Mahoning River Route), and Alternative D (Route 25's Southern Mahoning River Route). Property boundaries were indicated on the mapping with unique parcel identification numbers referenced to ownership spreadsheet. Virtual desktop and website information for the Project was also made available at the open house via desktop computers as well as provided links provided to impacted landowners within the notification letters prior to the open house event. The virtual desktop and website environment allows the public to explore many elements of the Project without physical requiring to be present at the scheduled open house event.

At the first open house event, six people attended the public information meeting. Most of these attendees were affiliated with a church along Alternative Option C: Northern Mahoning River Route or residences along Alternative Option A: Woodland Avenue. Both alternative options are reflected in Route 30. Based on the comments received from the public at the meeting, the church representatives requested to avoid the church property and would prefer Alternative Option D: Southern Mahoning River Route \ than Alternative Option C: Northern Mahoning River Route. Similar, the residences on Woodland Avenue also preferred Alternative Route Option B as an effort to avoid placement of transmission line in front of their residences. A last comment received verbally during the public meeting was associated with the portion of Alternative Option D located within Lincoln Park regarding potential for clearing and impacts to the surrounding park property.

Regarding the virtual desktop released concurrently with the public open house, no comments were received to date with a comment period between June 12, 2024, to April 22, 2024.

ATSI also held general discussion with public officials in the project area, including representatives from the City of Youngstown. No major objections to the route concepts under consideration were noted. City officials acknowledged the economic benefits of the project and suggested that a ROW along the Mahoning River within Youngstown could provide a beneficial corridor for future recreational use and maintenance of the area.

Following the public meeting and discussions with public officials, the siting team continued its detailed evaluation of the study segments still under consideration. Since the open house, additional refinements and verification of constraints of the segments were completed and included:

- Segment 1 was adjusted to cross the railroad grade more perpendicular crossing based on previous coordination for aerial and occupancy permits required for railroad areas.

- Segment 27 was further desktop investigated by engineering the presence of the junk yard / landfill area with identifying the potential restrictions for access and soil stability concerns for installation of structure foundations. Further outreach was completed with the landowner of the property to verify the route location and access considerations. Engineering did not identify this as a fatal flaw but additional geotechnical investigations, structure design considerations, and engineering would be necessary for installation of structures within this location.

- Segments 36 and 39 were adjusted by engineering to provide a more favorable crossing of the Center Street Bridge as well as avoid placement of the transmission line within a junk yard area located south of W. Cherry St.

- Segments 49 and 54 were adjusted by engineering to avoid placement of transmission line on existing distribution line along Oak St. Ext and center the alignment along Lamar Avenue to be within roadway ROW.

- Segment 40 was identified with a potential church property that appeared to be recently sold located at the intersection of Gladstone and Keystone St. ATSI reached out directly with the landowner and identified property was sold and currently in use of a daycare facility. Based on the coordination of the route directly with the property owner, no concerns were identified at the time and no adjustments to segment was warranted.

These adjustments to the segments were updated in the quantitative analysis for this route selection study and reflected in the results included in this report in **Section 8**, including tables and figures. These adjustments are planned to be presented in the second open house scheduled to be held in June 2025.

11.0 Summary and Recommendations

Based on a quantitative and qualitative review of information obtained from GIS data, field reconnaissance, agency consultation and public outreach, as well as engineering and cost estimates for the two alternatives, the Siting Team recommends Route 25 as the Preferred Route and Route 30 as the Alternative Route.

Route 25 was identified as the Preferred Route over Route 30 due to the following factors:

- Route 25 avoids St. Angela Merici Church's property identified at intersection of Wilson and Gladstone, which coincides with public opinion of the first open house event to be avoided.

- Route 25 avoids placement within Lincoln Park and therefore requires significantly less clearing of forested areas, which is likely to decrease construction costs and potential ecological impacts.

- Route 25 avoids placement of route along Woodland Avenue and will utilize the ODOT alternative to coincide with public opinion.

- Route 25 would avoid placement of structures within landfill areas identified as potential increase of costs for geotechnical investigations, structure foundations designs, and access considerations.

ATTACHMENTS

TABLES

TABLE 2A: QUANTITATIVE CANDIDATE SEGMENTS SCORES AND RANKING

Route	Normalized Ecological Score	Ecological Rank	Normalized Cultural Score	Cultural Rank	Normalized Land Use Score	Land Use Rank	Normalized Engineering Score	Engineering Rank	Total Score	Rank
53	0.82	7	0.00	1	2.45	5	22.86	11	3.60	**1**
35A	0.00	1	5.88	24	0.93	4	26.70	14	3.63	**2**
20	1.56	14	1.47	6	3.78	13	17.27	2	4.01	**3**
17	0.79	6	1.47	6	4.24	15	18.71	3	4.03	**4**
20A	1.05	10	0.74	2	4.72	17	20.70	6	4.45	**5**
2A	0.34	5	32.11	42	0.00	1	24.07	12	5.76	**6**
12A	0.25	3	7.35	25	9.06	32	20.59	4	6.52	**7**
22	5.54	23	0.74	2	3.12	8	29.99	18	6.54	**8**
51	1.78	15	2.21	12	10.15	33	21.01	8	7.09	**9**
1B	1.00	8	29.17	40	0.00	1	39.12	32	7.23	**10**
24	1.78	16	2.94	14	8.85	28	29.55	17	7.50	**11**
39	1.85	17	9.56	28	4.45	16	42.72	38	7.75	**12**
48	1.20	13	0.74	2	14.51	39	20.66	5	8.42	**13**
15	2.89	19	16.42	37	8.87	30	21.87	10	8.53	**14**
1A	1.02	9	34.31	44	0.00	1	48.35	42	8.67	**15**
54	4.11	21	13.97	35	4.93	18	37.34	26	8.75	**16**
3	0.34	4	32.11	42	5.71	22	35.00	21	9.13	**17**
47	15.62	33	1.47	6	3.51	10	21.74	9	9.97	**18**
27	4.33	22	13.24	33	8.91	31	38.46	30	10.47	**19**
41	3.86	20	3.68	16	12.64	36	39.60	34	10.93	**20**
35	13.81	29	9.56	28	2.63	6	35.92	24	11.12	**21**
30	0.11	2	10.29	30	18.17	41	28.82	16	11.23	**22**
49	15.88	34	1.47	6	2.73	7	37.17	25	11.31	**23**
55	8.63	25	13.24	33	7.05	24	37.34	26	11.33	**24**
38	12.67	28	5.15	22	4.95	19	38.18	29	11.38	**25**
2	1.91	18	36.52	45	11.18	34	25.27	13	11.41	**26**
59	1.16	11	8.82	26	14.39	38	48.13	41	11.92	**27**
52	14.31	30	1.47	6	5.66	21	39.36	33	12.07	**28**
12	1.18	12	17.16	39	15.83	40	37.88	28	12.31	**29**
46	21.54	42	0.74	2	4.17	14	20.93	7	12.45	**30**
23	6.65	24	13.97	35	11.94	35	38.48	31	12.68	**31**
19	15.06	32	3.68	16	8.58	26	41.72	36	14.00	**32**
18	18.61	39	2.21	12	5.17	20	44.97	39	14.23	**33**
25	16.95	35	8.82	26	3.76	12	50.70	43	14.24	**34**
36	17.21	37.00	5.15	22.00	3.72	11.00	54.46	45.00	14.33	**35**
29	14.58	31	4.41	21	13.40	37	28.64	15	14.50	**36**
43	17.39	38	11.03	31	8.68	27	34.74	20	15.00	**37**
26	17.00	36	3.68	16	7.34	25	52.89	44	15.39	**38**
5	10.91	27	50.00	46	8.85	29	42.02	37	17.11	**39**
42	19.70	41	12.50	32	22.27	43	3.07	1	18.34	**40**
37	31.23	44	1.47	6	6.03	23	40.21	35	19.07	**41**
1	26.97	43	31.37	41	3.35	9	46.18	40	19.89	**42**
34	19.11	40	16.91	38	22.14	42	35.49	22	21.74	**43**
40	10.02	26	3.68	16	35.74	44	31.62	19	21.83	**44**
50	33.26	45	2.94	14	43.37	46	35.73	23	34.52	**45**
31	56.31	46	3.68	16	40.44	45	57.98	46	44.87	**46**
MIN	**0.00**		**0.00**		**0.00**		**3.07**		**3.60**	
MAX	**56.31**		**50**		**43.37**		**57.978**		**44.87**	

TABLE 2B: QUANTITATIVE COMBINED SEGMENT ROUTES SCORES AND RANKING

Route	Normalized Ecological Score	Ecological Rank	Normalized Cultural Score	Cultural Rank	Normalized Land Use Score	Land Use Rank	Normalized Engineering Score	Engineering Rank	Total Score	Rank
Route 27: 1 - 1B - 2 - 12 - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55 - 59	4.88	1	6.14	2	25.76	5	47.84	15	17.66	1
Route 22: 1 - 1A - 2 - 2A - 12 - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55 - 59	5.49	2	24.78	15	26.76	7	52.12	16	20.59	2
Route 30: 1 - 1B - 2 - 12 - 12A - 15 - 17 - 20 - 20A - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55	14.02	8	15.46	6	28.71	10	39.95	9	22.63	3
Route 10: 1 - 1A - 3 - 5 - 12 - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55 - 59	19.29	13	32.57	21	20.63	2	54.20	19	24.65	4
Route 26: 1 - 1B - 2 - 12 - 22 - 25 - 27 - 35 - 35A - 39 - 40 - 48 - 49 - 54 - 55 - 59	9.51	6	8.55	3	34.29	18	65.41	27	24.92	5
Route 25: 1 - 1B - 2 - 12 - 22 - 26 - 36 - 39 - 40 - 48 - 49 - 54 - 55 - 59	8.06	4	0.00	1	35.71	21	78.07	35	25.32	6
Route 19: 1 - 1A - 2 - 2A - 12 - 12A - 15 - 17 - 20 - 20A - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55	14.63	9	34.10	22	27.08	8	52.43	17	25.34	7
Route 18: 1 - 1A - 2 - 2A - 12 - 12A - 15 - 17 - 20 - 20A - 22 - 25 - 27 - 35 - 35A - 39 - 40 - 48 - 49 - 54	5.71	3	31.03	20	35.02	20	63.67	25	25.76	8
Route 28: 1 - 1B - 2 - 12 - 22 - 25 - 27 - 34 - 42 - 43 - 47 - 54 - 55 - 59	32.51	22	11.84	5	25.66	4	20.82	1	26.53	9
Route 23: 1 - 1A - 2 - 2A - 12 - 22 - 25 - 27 - 35 - 35A - 39 - 40 - 48 - 49 - 54 - 55 - 59	10.13	7	27.19	17	34.03	17	65.44	28	26.93	10
Route 24: 1 - 1A - 2 - 2A - 12 - 22 - 26 - 36 - 39 - 40 - 48 - 49 - 54 - 55 - 59	8.67	5	18.64	11	37.82	25	74.45	33	27.91	11
Route 11: 1 - 1A - 5 - 12 - 22 - 25 - 27 - 35 - 35A - 39 - 40 - 48 - 49 - 54 - 55 - 59	23.34	15	17.87	8	26.03	6	64.67	26	28.00	12
Route 17: 1 - 1A - 2 - 2A - 12 - 12A - 15 - 17 - 20 - 20A - 22 - 26 - 36 - 39 - 40 - 48 - 49 - 54 - 55	17.81	11	27.96	18	31.51	11	71.26	30	29.65	13
Route 21: 1 - 1A - 2 - 2A - 12 - 22 - 25 - 27 - 34 - 42 - 43 - 47 - 54 - 55 - 59	33.13	24	30.48	19	24.28	3	42.93	10	30.30	14
Route 35: 1 - 1B - 2 - 12 - 12A - 15 - 17 - 18 - 19 - 23 - 27 - 34 - 41 - 48 - 49 - 54 - 55	26.18	16	17.87	8	34.61	19	44.57	11	30.56	15
Route 32: 1 - 1B - 2 - 12 - 12A - 15 - 17 - 20 - 20A - 22 - 26 - 36 - 39 - 40 - 48 - 49 - 54 - 55	17.20	10	9.32	4	44.17	32	62.43	24	31.72	16
Route 7: 1 - 1A - 3 - 5 - 12 - 12A - 15 - 17 - 20 - 20A - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55	28.42	18	41.89	29	28.71	9	46.93	14	31.73	17
Route 31: 1 - 1B - 2 - 12 - 12A - 15 - 17 - 20 - 20A - 22 - 25 - 27 - 35 - 35A - 39 - 40 - 48 - 49 - 54 - 55	18.65	12	17.87	8	41.76	28	59.51	22	31.90	18
Route 12: 1 - 1A - 3 - 5 - 12 - 22 - 26 - 36 - 39 - 40 - 48 - 49 - 54 - 55 - 59	22.47	14	26.43	16	36.83	22	74.17	32	33.78	19
Route 9: 1 - 1A - 3 - 5 - 12 - 22 - 25 - 27 - 34 - 42 - 43 - 47 - 54 - 55 - 59	46.92	29	38.27	26	20.14	1	31.82	7	33.83	20
Route 29: 1 - 1B - 2 - 12 - 12A - 15 - 17 - 20 - 20A - 22 - 25 - 27 - 34 - 42 - 43 - 47 - 54 - 55	41.65	26	21.16	13	31.75	13	25.01	4	33.98	21
Route 14: 1 - 1A - 2 - 2A - 12 - 12A - 15 - 17 - 18 - 19 - 23 - 27 - 34 - 41 - 48 - 49 - 54 - 55	26.79	17	36.51	25	38.49	26	46.17	13	34.38	22
Route 34: 1 - 1B - 2 - 12 - 12A - 15 - 17 - 18 - 19 - 23 - 27 - 35 - 35A - 39 - 40 - 48 - 49 - 54 - 55	30.81	19	20.29	12	42.15	29	55.82	21	36.79	23
Route 20: 1 - 1A - 2 - 2A - 12 - 12A - 15 - 17 - 20 - 20A - 22 - 25 - 27 - 34 - 42 - 43 - 47 - 54 - 55	42.26	27	39.80	28	31.75	13	36.25	8	37.21	24
Route 2: 1 - 1A - 3 - 5 - 12 - 12A - 15 - 17 - 18 - 19 - 23 - 27 - 34 - 41 - 48 - 49 - 54 - 55	40.59	25	44.30	32	33.23	16	45.42	12	38.50	25
Route 5: 1 - 1A - 3 - 5 - 12 - 12A - 15 - 17 - 20 - 20A - 22 - 26 - 36 - 39 - 40 - 48 - 49 - 54 - 55	31.60	21	35.75	24	42.19	31	68.80	29	39.97	26
Route 6: 1 - 1A - 3 - 5 - 12 - 12A - 15 - 17 - 20 - 20A - 22 - 25 - 27 - 35 - 35A - 39 - 40 - 48 - 49 - 54	33.05	23	44.30	32	42.15	30	61.06	23	40.62	27
Route 36: 1 - 1B - 2 - 12 - 12A - 15 - 17 - 18 - 19 - 23 - 27 - 34 - 42 - 43 - 47 - 54 - 55	53.81	30	23.57	14	37.27	24	30.08	6	41.80	28
Route 15: 1 - 1A - 2 - 2A - 12 - 12A - 15 - 17 - 18 - 19 - 23 - 27 - 35 - 35A - 39 - 40 - 48 - 49 - 54 - 55	31.42	20	38.93	27	51.54	35	55.78	20	42.66	29
Route 8: 1 - 1A - 3 - 5 - 12 - 12A - 15 - 17 - 20 - 20A - 22 - 25 - 27 - 34 - 42 - 43 - 47 - 54 - 55	56.05	32	47.59	35	33.09	15	22.87	2	42.71	30
Route 13: 1 - 1A - 2 - 2A - 12 - 12A - 15 - 17 - 18 - 19 - 23 - 27 - 34 - 42 - 43 - 47 - 54 - 55	54.42	31	42.21	30	37.01	23	23.51	3	43.15	31
Route 3: 1 - 1A - 3 - 5 - 12 - 12A - 15 - 17 - 18 - 19 - 23 - 27 - 35 - 35A - 39 - 40 - 48 - 49 - 54 - 55	45.22	28	46.71	34	40.77	27	54.04	18	44.47	32
Route 1: 1 - 1A - 3 - 5 - 12 - 12A - 15 - 17 - 18 - 19 - 23 - 27 - 34 - 42 - 43 - 47 - 54 - 55	68.22	35	50.00	36	31.75	12	25.35	5	47.52	33
Route 33: 1 - 1B - 2 - 12 - 12A - 15 - 17 - 18 - 19 - 23 - 25 - 26 - 36 - 39 - 40 - 48 - 49 - 54 - 55	59.10	33	17.00	7	49.19	33	77.71	34	52.79	34
Route 16: 1 - 1A - 2 - 2A - 12 - 12A - 15 - 17 - 18 - 19 - 23 - 25 - 26 - 36 - 39 - 40 - 48 - 49 - 54 - 55	59.71	34	35.64	23	54.45	36	79.61	36	57.19	35
Route 4: 1 - 1A - 3 - 5 - 12 - 12A - 15 - 17 - 18 - 19 - 23 - 25 - 26 - 36 - 39 - 40 - 48 - 49 - 54 - 55	73.51	36	43.42	31	49.32	34	72.96	31	60.77	36
MIN	**4.88**		**0.00**		**20.14**		**20.82**		**17.66**	
MAX	**73.51**		**50.00**		**54.45**		**79.61**		**60.77**	

TABLE 3A: QUANTITATIVE ECOLOGICAL ROUTING COMPARISON

Route	Area of Woodlots within 65-ft ROW (acres) (a)	Normalized Score for Area of Woodlots within 65-ft ROW (acres) (a)	Area of NWI Wetlands within 65-ft ROW (acres) (b)	Normalized Score for Area of NWI Wetlands within 65-ft ROW (acres) (b)	Stream Crossings (c)	Normalized Score for Stream Crossings (c)	Federal or State Endangered or Threatened Species Areas within 65 ft ROW (d)	Normalized Score for Federal or State Endangered or Threatened Species Areas within 65 ft ROW (weighted 60%) (d)	Federal or State Endangered or Threatened Species Areas between ROW and 1,000 ft (d)	Normalized Score for Federal or State Endangered or Threatened Species Areas between ROW and 1,000 ft (weighted 25%) (d)	Federal or State Protected Species between ROW and 1,000 ft (d)	Normalized Score for Federal or State Protected Species between ROW and 1,000 ft (weighted 15%) (d)
Route 10: 1 - 1A - 3 - 5 - 12 - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55 - 59	19.04	84	1.08	100	4	0	0	0	0	0	0	0
Route 18: 1 - 1A - 2 - 2A - 12 - 12A - 15 - 17 - 20 - 20A - 22 - 25 - 27 - 35 - 35A - 39 - 40 - 48 - 49 - 54	19.41	100	0.84	4	4	0	0	0	0	0	0	0
Route 19:1 - 1A - 2 - 2A - 12 - 12A - 15 - 17 - 20 - 20A - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55	18.62	65	0.84	4	4	0	0	0	0	0	0	0
Route 22: 1 - 1A - 2 - 2A - 12 - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55 - 59	19.32	96	0.84	4	4	0	0	0	0	0	0	0
Route 23: 1 - 1A - 2 - 2A - 12 - 22 - 25 - 27 - 35 - 35A - 39 - 40 - 48 - 49 - 54 - 55 - 59	17.45	13	0.84	3	4	0	0	0	0	0	0	0
Route 25: 1 - 1B - 2 - 12 - 22 - 26 - 36 - 39 - 40 - 48 - 49 - 54 - 55 - 59	17.15	0	0.83	0	4	0	0	0	0	0	0	0
Route 26: 1 - 1B - 2 - 12 - 22 - 25 - 27 - 35 - 35A - 39 - 40 - 48 - 49 - 54 - 55 - 59	18.30	51	0.84	3	4	0	0	0	0	0	0	0
Route 27: 1 - 1B - 2 - 12 - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55 - 59	19.30	95	0.84	4	4	0	0	0	0	0	0	0
Route 28: 1 - 1B - 2 - 12 - 22 - 25 - 27 - 34 - 42 - 43 - 47 - 54 - 55 - 59	17.34	8	0.93	39	6	100	0	0	0	0	0	0
Route 30: 1 - 1B - 2 - 12 - 12A - 15 - 17 - 20 - 20A - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55	19.04	84	0.84	4	4	0	0	0	0	0	0	0
MIN	**17.15**	**0**	**0.83**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
MAX	**19.41**	**100**	**1.08**	**100**	**6**	**100**	**0**	**0**	**0**	**0**	**0**	**0**
RANGE	**2.26**		**0.25**		**2**		**0**		**0**		**0**	

(a) sources: USGS topographic quadrangles, aerial photography, and field observation

(b) source: National Wetland Inventory data

(c) source: USGS topographic quadrangle maps

(d) source: ODNR Biodiversity Database and Pennsylvania Natural Diversity Inventory

TABLE 3B: QUANTITATIVE CULTURAL ROUTING COMPARISON

Route	National Register of Historic Places within 1,000 ft (e)	Normalized Score for National Register of Historic Places within 1,000 ft (e)	Known Archaeology Sites within 100 ft (f)	Normalized Score for Known Archaeology Sites within 100 ft (f)	Ohio Historical Inventory Historic Structures within 1,000 ft (f)	Normalized Score for Ohio Historical Inventory Historic Structures within 1,000 ft (f)	Cemeteries within 100 ft (g)	Normalized Score for Cemeteries within 100 ft (g)
Route 10: 1 - 1A - 3 - 5 - 12 - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55 - 59	3	0	0	0	106	86	0	0
Route 18: 1 - 1A - 2 - 2A - 12 - 12A - 15 - 17 - 20 - 20A - 22 - 25 - 27 - 35 - 35A - 39 - 40 - 48 - 49 - 54	3	0	0	0	102	71	0	0
Route 19:1 - 1A - 2 - 2A - 12 - 12A - 15 - 17 - 20 - 20A - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55	3	0	0	0	105	82	0	0
Route 22: 1 - 1A - 2 - 2A - 12 - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55 - 59	3	0	0	0	105	82	0	0
Route 23: 1 - 1A - 2 - 2A - 12 - 22 - 25 - 27 - 35 - 35A - 39 - 40 - 48 - 49 - 54 - 55 - 59	3	0	0	0	103	75	0	0
Route 25: 1 - 1B - 2 - 12 - 22 - 26 - 36 - 39 - 40 - 48 - 49 - 54 - 55 - 59	3	0	0	0	82	0	0	0
Route 26: 1 - 1B - 2 - 12 - 22 - 25 - 27 - 35 - 35A - 39 - 40 - 48 - 49 - 54 - 55 - 59	3	0	0	0	96	50	0	0
Route 27: 1 - 1B - 2 - 12 - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55 - 59	3	0	0	0	98	57	0	0
Route 28: 1 - 1B - 2 - 12 - 22 - 25 - 27 - 34 - 42 - 43 - 47 - 54 - 55 - 59	3	0	0	0	110	100	0	0
Route 30: 1 - 1B - 2 - 12 - 12A - 15 - 17 - 20 - 20A - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55	3	0	0	0	98	57	0	0
MIN	**3**	**0**	**0**	**0**	**82**	**0**	**0**	**0**
MAX	**3**	**0**	**0**	**0**	**110**	**100**	**0**	**0**
RANGE	**0**		**0**		**28**		**0**	

(e) source: OHPO and PHMC databases

(e) source: OHPO and PHMC databases

(g) sources: USGS topographic quadrangles and field observation

TABLE 3C: QUANTITATIVE LAND USE ROUTING COMPARISON

Route	Residences within 32.5 ft (h)	Normalized Score for Residences within 32.5 ft (weighted 50%) (h)	Residences between 32.5 and 100 ft (h)	Normalized Score for Residences between 32.5 and 100 ft (weighted 30%) (h)	Residences between 100 and 1,000 ft (h)	Normalized Score for Residences between 100 and 1,000 ft (weighted 20%) (h)	Non-residential Buildings within 32.5 ft (h)	Normalized Score for Non-residential Buildings within 32.5 ft (weighted 20%) (h)	Properties Crossed by Centerline (i)	Normalized Score for Properties Crossed by Centerline (i)	Linear Feet of Institutional Land Uses Crossed (j)	Normalized Score for Linear Feet of Institutional Land Uses Crossed (weighted 67%) (j)	Institut-ional Land Uses within 1,000 ft (j)	Normalized Score for Institutional Land Uses within 1,000 ft (weighted 33%) (j)	Linear Feet of Other Sensitive Land Uses Crossed (j)	Normalized Score for Linear Feet of Other Sensitive Land Uses Crossed (weighted 67%) (k)	Other Sensitive Land Uses within 1,000 ft (k)	Normalized Score for Other Sensitive Land Uses within 1,000 ft (weighted 33%) (k)
Route 10: 1 - 1A - 3 - 5 - 12 - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55 - 59	0	0	6	5	436	11	0	0	84	18	86	0	18	8	1786	37	4	33
Route 18: 1 - 1A - 2 - 2A - 12 - 12A - 15 - 17 - 20 - 20A - 22 - 25 - 27 - 35 - 35A - 39 - 40 - 48 - 49 - 54	0	0	11	30	526	19	0	0	120	100	869	67	21	33	0	0	2	0
Route 19:1 - 1A - 2 - 2A - 12 - 12A - 15 - 17 - 20 - 20A - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55	0	0	7	10	421	10	0	0	95	43	86	0	18	8	1786	37	4	33
Route 22: 1 - 1A - 2 - 2A - 12 - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55 - 59	0	0	6	5	436	11	0	0	90	32	86	0	18	8	1786	37	4	33
Route 23: 1 - 1A - 2 - 2A - 12 - 22 - 25 - 27 - 35 - 35A - 39 - 40 - 48 - 49 - 54 - 55 - 59	0	0	10	25	541	20	0	0	115	89	869	67	21	33	0	0	3	17
Route 25: 1 - 1B - 2 - 12 - 22 - 26 - 36 - 39 - 40 - 48 - 49 - 54 - 55 - 59	0	0	10	25	510	17	0	0	108	73	869	67	19	17	0	0	3	17
Route 26: 1 - 1B - 2 - 12 - 22 - 25 - 27 - 35 - 35A - 39 - 40 - 48 - 49 - 54 - 55 - 59	0	0	9	20	541	20	0	0	111	80	869	67	21	33	0	0	3	17
Route 27: 1 - 1B - 2 - 12 - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55 - 59	0	0	6	5	436	11	0	0	86	23	86	0	18	8	1786	37	4	33
Route 28: 1 - 1B - 2 - 12 - 22 - 25 - 27 - 34 - 42 - 43 - 47 - 54 - 55 - 59	0	0	5	0	304	0	0	0	76	0	86	0	17	0	3277	67	4	33
Route 30: 1 - 1B - 2 - 12 - 12A - 15 - 17 - 20 - 20A - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55	0	0	7	10	421	10	0	0	91	34	86	0	18	8	1786	37	4	33
MIN	**0**	**0**	**5**	**0**	**304**	**0**	**0**	**0**	**76**	**0**	**86**	**0**	**17**	**8**	**0**	**37**	**2**	**33**
MAX	**0**	**0**	**11**	**30**	**541**	**20**	**0**	**0**	**120**	**100**	**869**	**0**	**21**	**8**	**3277**	**37**	**4**	**33**
RANGE	**0**		**6**		**237**		**0**		**44**		**783**		**4**		**3277**		**2**	

(h) sources: plat maps, aerial photography, and field observation

(i) source: GIS parcel boundaries provided by the Portage County Auditor

(j) includes schools, churches, and hospitals, librarys
(k) includes airports, parks, preserves, park district property, designated managed areas, conservation sites, museums, and golf courses;
sources: USGS, ESRI GIS data, and field observation

TABLE 3D: QUANTITATIVE ENGINEERING ROUTING COMPARISON

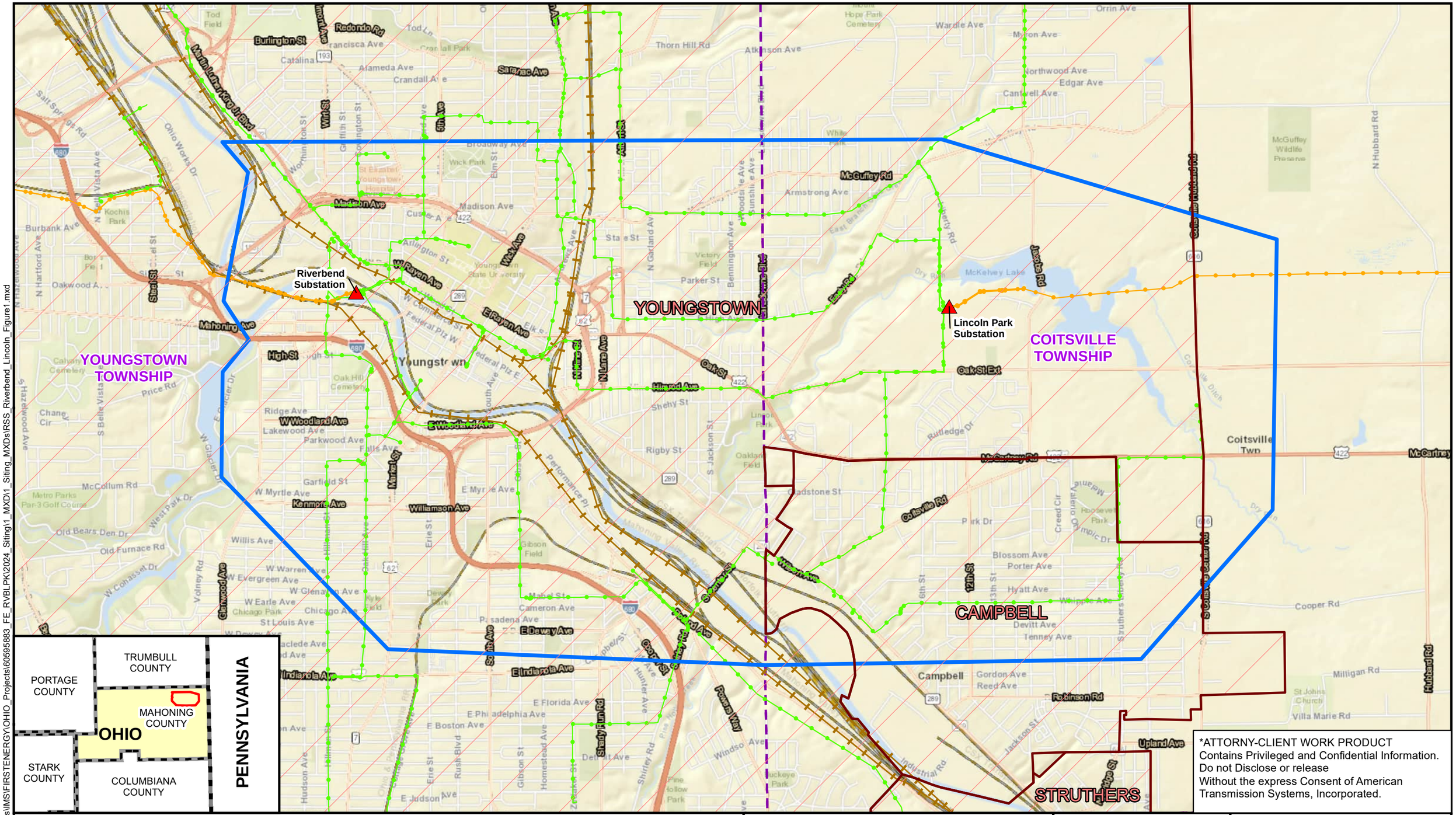
Route	Centerline Road Crossings (l)	Normalized Score for Centerline Road Crossings (l)	Centerline Railroad Crossings (l)	Normalized Score for Centerline Railroad Crossings (l)	Turn Angles Greater than 0 and Less than 20 Degrees	Normalized Score for Turn Angles Greater than 0 and Less than 20 Degrees (30%)	Turn Angles Greater than 20 Degrees	Normalized Score for Turn Angles Greater than 20 Degrees (70%)	Highway Overpass Crossings	Normalized Score for Highway Overpass Crossings	Percent of Length Paralleling Existing Electric ROW	Normalized Score for Length Paralleling Existing Electric ROW	Percent of Length Parallel to Road	Normalized Score for Percent of Length Parallel to Road	Length of Route	Normalized Score for Length of Route
Route 10: 1 - 1A - 3 - 5 - 12 - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55 - 59	29	100	6	50	20	8	31	0	1	18	18%	48	48%	38	5.69	27
Route 18: 1 - 1A - 2 - 2A - 12 - 12A - 15 - 17 - 20 - 20A - 22 - 25 - 27 - 35 - 35A - 39 - 40 - 48 - 49 - 54	25	0	8	100	21	11	32	14	4	70	14%	100	44%	73	6.10	80
Route 19:1 - 1A - 2 - 2A - 12 - 12A - 15 - 17 - 20 - 20A - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55	25	0	6	50	17	0	33	28	4	70	18%	49	54%	2	5.70	28
Route 22: 1 - 1A - 2 - 2A - 12 - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55 - 59	29	100	6	50	19	5	33	28	2	35	18%	50	50%	23	5.72	31
Route 23: 1 - 1A - 2 - 2A - 12 - 22 - 25 - 27 - 35 - 35A - 39 - 40 - 48 - 49 - 54 - 55 - 59	29	100	8	100	23	16	35	56	3	53	17%	66	41%	94	6.13	83
Route 25: 1 - 1B - 2 - 12 - 22 - 26 - 36 - 39 - 40 - 48 - 49 - 54 - 55 - 59	29	100	5	25	28	30	36	70	0	0	19%	38	40%	100	6.25	100
Route 26: 1 - 1B - 2 - 12 - 22 - 25 - 27 - 35 - 35A - 39 - 40 - 48 - 49 - 54 - 55 - 59	29	100	6	50	23	16	35	56	0	0	17%	65	41%	93	6.10	80
Route 27: 1 - 1B - 2 - 12 - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55 - 59	29	100	4	0	19	5	33	28	0	0	18%	49	51%	22	5.70	28
Route 28: 1 - 1B - 2 - 12 - 22 - 25 - 27 - 34 - 42 - 43 - 47 - 54 - 55 - 59	27	50	4	0	28	30	35	56	0	0	22%	0	43%	76	5.49	0
Route 30: 1 - 1B - 2 - 12 - 12A - 15 - 17 - 20 - 20A - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55	25	0	4	0	17	0	33	28	2	35	18%	48	54%	0	5.67	24
MIN	**25**	**0**	**4**	**0**	**17**	**0**	**31**	**0**	**0**	**0**	**14%**	**100**	**40%**	**100**	**5.49**	**0**
MAX	**29**	**100**	**8**	**0**	**28**	**30**	**36**	**70**	**4**	**100**	**22%**	**0**	**54%**	**0**	**6.25**	**100**
RANGE	**4**		**4**		**11**		**5**		**4**		**7%**		**14%**		**0.77**	

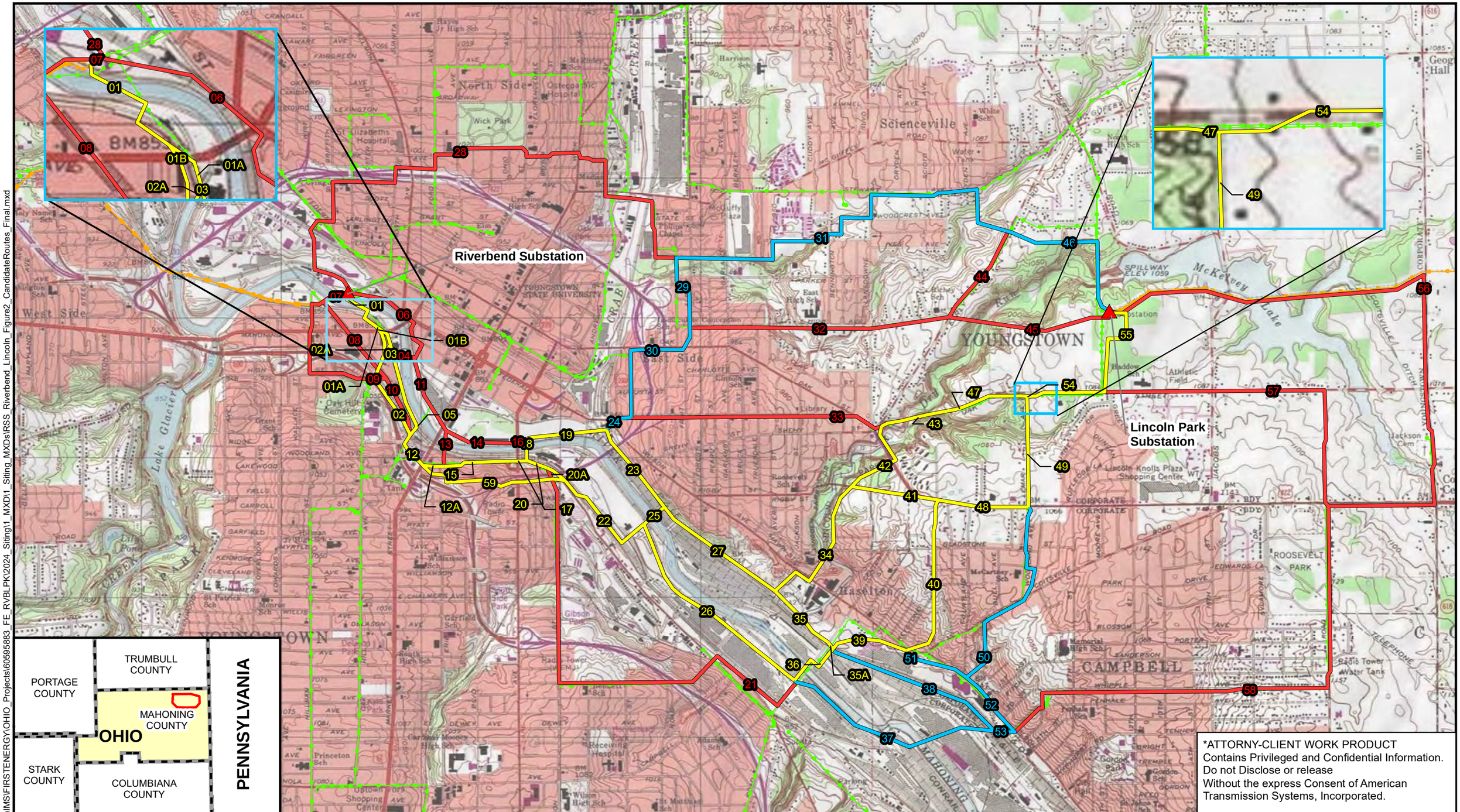
(l) sources: USGS topographic quadrangles, USGS digital orthophoto quadrangles and field observation

TABLE 3E: QUANTITATIVE ROUTE SCORES AND RANKING

Route	Normalized Ecological Score	Ecological Rank	Normalized Cultural Score	Cultural Rank	Normalized Land Use Score	Land Use Rank	Normalized Engineering Score	Engineering Rank	Total Score	Rank
Route 30: 1 - 1B - 2 - 12 - 12A - 15 - 17 - 20 - 20A - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55	21.89	5	14.29	3	26.35	5	16.67	1	22.39	**1**
Route 19: 1 - 1A - 2 - 2A - 12 - 12A - 15 - 17 - 20 - 20A - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55	17.19	4	20.54	7	28.16	6	25.99	2	22.79	**2**
Route 27: 1 - 1B - 2 - 12 - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55 - 59	24.77	6	14.29	3	23.33	3	38.62	4	24.53	**3**
Route 25: 1 - 1B - 2 - 12 - 22 - 26 - 36 - 39 - 40 - 48 - 49 - 54 - 55 - 59	0.00	1	0.00	1	43.02	7	77.13	9	24.92	**4**
Route 22: 1 - 1A - 2 - 2A - 12 - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55 - 59	25.00	7	20.54	7	25.15	4	47.92	6	26.90	**5**
Route 28: 1 - 1B - 2 - 12 - 22 - 25 - 27 - 34 - 42 - 43 - 47 - 54 - 55 - 59	36.96	9	25.00	10	20.00	1	35.30	3	28.81	**6**
Route 23: 1 - 1A - 2 - 2A - 12 - 22 - 25 - 27 - 35 - 35A - 39 - 40 - 48 - 49 - 54 - 55 - 59	4.10	2	18.75	6	50.03	10	85.85	10	32.11	**7**
Route 26: 1 - 1B - 2 - 12 - 22 - 25 - 27 - 35 - 35A - 39 - 40 - 48 - 49 - 54 - 55 - 59	13.49	3	12.50	2	47.21	8	76.63	8	33.19	**8**
Route 10: 1 - 1A - 3 - 5 - 12 - 22 - 25 - 27 - 34 - 41 - 48 - 49 - 54 - 55 - 59	45.91	10	21.43	9	22.42	2	45.16	5	33.99	**9**
Route 18: 1 - 1A - 2 - 2A - 12 - 12A - 15 - 17 - 20 - 20A - 22 - 25 - 27 - 35 - 35A - 39 - 40 - 48 - 49 - 54	26.04	8	17.86	5	49.75	9	62.93	7	38.39	**10**
MIN	**0.00**		**0.00**		**20.00**		**16.67**		**22.39**	
MAX	**45.91**		**25.00**		**50.03**		**85.85**		**38.39**	

FIGURES


Riverbend Substation
Lincoln Park Substation
YOUNGSTOWN
YOUNGSTOWN TOWNSHIP
COITSVILLE TOWNSHIP
CAMPBELL
STRUTHERS
Coitsville Twp
Campbell
Youngstown
Burlington St
Redondo Rd
Martin Luther King Jr Blvd
Wirt St
5th Ave
Sarasnac Ave
Thorn Hill Rd
Atkinson Ave
Wardle Ave
Orrin Ave
Myron Ave
Northwood Ave
Edgar Ave
Cantwell Ave
McGuffey Rd
Armstrong Ave
McKelvey Lake
Jacobs Rd
Coitsville-Hubbard Rd
N Hubbard Rd
McGuffey Wildlife Preserve
Madison Ave
Broadway Ave
Wick Park
Wick Ave
State St
Parker St
Victory Field
Bennington Ave
Liberty Rd
Early Rd
Belmont Ave
Mahoning Ave
W Rayen Ave
E Rayen Ave
Steel St
High St
Oak St
Oak St Ext
Hillman St
N Lora Ave
Himrod Ave
Shehy St
Rigby St
Rutledge Dr
Lincoln Park
Oakland Field
Gladstone St
Collins Ave
Park Dr
Creed Cir
Olympic Dr
Roosevelt Park
Blossom Ave
Porter Ave
Hyatt Ave
Whipple Ave
Devitt Ave
Tenney Ave
6th St
12th St
13th St
Struthers Liberty Rd
S Commerce Rd
Cooper Rd
Milligan Rd
St Johns Church
Villa Marie Rd
Hubbard Rd
Robinson Rd
Gordon Ave
Reed Ave
Upland Ave
Jackson St
Industrial Rd
CSX Transportation
Mahoning River
Mill Creek
Yellow Creek
Dry Run
Coitsville Ditch
Performance Pl
Powers Way
Windsor Ave
Shirley Rd
Pine Hollow Park
Buckeye Park
Hunter Ave
Homestead Ave
Rush Blvd
Gibson St
Zedaker St
Shadyside Rd
Hudson Ave
Glenwood Ave
Volney Rd
Old Furnace Rd
Old Bears Den Dr
West Park Dr
McCollum Rd
Metro Parks Par-3 Golf Course
Garfield St
W Myrtle Ave
Kenmore Ave
Williamson Ave
Willis Ave
W Warren Ave
W Evergreen Ave
W Glenayre Ave
W Earle Ave
Chicago Park
St Louis Ave
Mabel St
Cameron Ave
Pasadena Ave
E Dewey Ave
E Indianola Ave
E Florida Ave
E Philadelphia Ave
E Boston Ave
E Judson Ave
Ridge Ave
W Woodland Ave
E Woodland Ave
Lakewood Ave
Parkwood Ave
Falls Ave
Price Rd
Chane Cir
S Bellevista Ave
S Hazelwood Ave
N Hazelwood Ave
Burbank Ave
Oakwood Ave
N Hartford Ave
Kochis Park
Ohio Works Dr
Salt Springs Rd
Tod Field
Tod Ln
Crandall Park
Catalina Ave
Alameda Ave
Crandall Ave
Francisca Ave
Calvary Cemetery
Oak Hill Cemetery
Hope Park Cemetery
Federal Plz W
Federal Plz E
W Commerce St
Arlington St
Elk St
Wick Ave
Elm St
Griffith St
Worthington St
Gibson Field
Dewey Park
Kyle Field
Chicago Ave
Hillman St
Oak Hill Ave
Erie St
Rush Blvd
Gibson St
Homestead Ave
Zedaker St
Shadyside Rd
Hunter Ave
Powers Way
Windsor Ave
Shirley Rd
Pine Hollow Park
Buckeye Park
Oakland Field
Gladstone St



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Legend

- Substation
- Existing 23 kV Subtransmission Line
- Existing 138 kV Transmission Line
- Candidate Route Segments
- Candidate Route Segment (Eliminated Quantitatively)
- Candidate Route Segment (Eliminated Qualitatively)

0 0.25 0.5 Miles

N

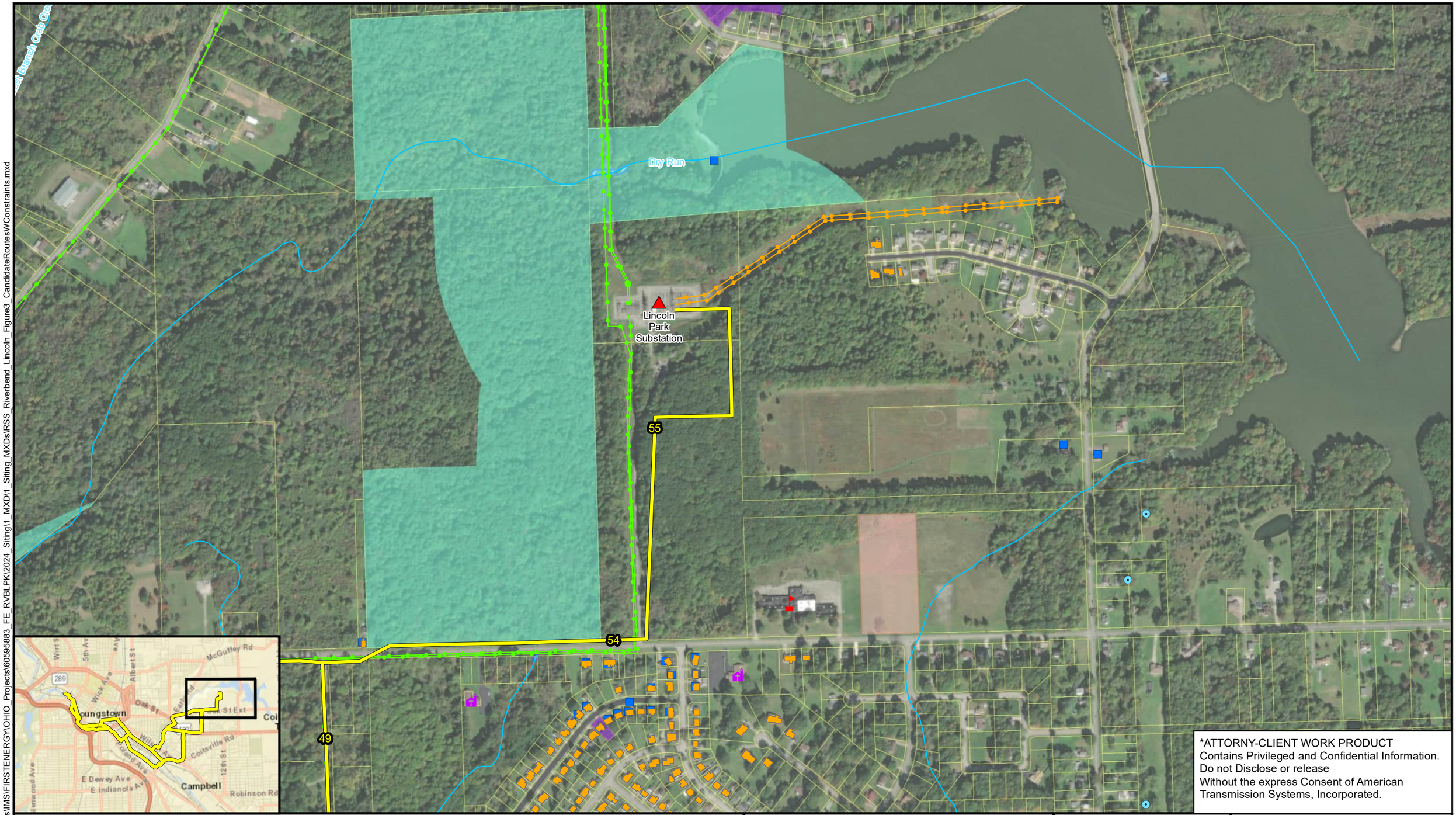
ATSI

American Transmission Systems, Inc.
Youngstown 138kV Reinforcement
Transmission Line Project
Route Selection Study
Figure 2
Candidate Routes by Segment

Source: BMCD, ESRI, ARCGIS Online World Street Map

Issued: April 23, 2025

URS Path: X:\DCS\Projects\IMS\FIRSTENERGY\OHIO_Projects\60595883_FE_RVBLPK\2024_Siting\1_MXD\1_Siting_MXDs\RSS_Riverbend_Lincoln_Figure2_CandidateRoutes_Final.mxd



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Legend

- Substation
- Existing 23 kV Subtransmission Line
- Existing 138 kV Transmission Line
- Candidate Route Segments
- Railroads
- Stream (National Hydrography Dataset)
- Historic Structure (OHPO)
- National Register Listing (OHPO)
- National Register Determinations of Eligibility (OHPO)
- Cemetery (OHPO)

Mahoning County Data

- Museum
- Monument
- Well
- Church
- School
- Residence
- National Wetland Inventory
- Parcel Owned by City
- Sensitive Land Use/Parks
- Land Bank Parcel
- Parcel Boundary

0 250 500 1,000 Feet

N

ATSI

American Transmission Systems, Inc.
Youngstown 138kV Reinforcement
Transmission Line Project
Figure 3
Candidate Routes with Identified Constraints
Page 1 of 5

Source: BMCD, ESRI, Mahoning County Auditor, USGS, OHPO, ArcGIS Online Bing Map Hybrid

Issued: April 23, 2025

URS Path: X:\DCS\Projects\IMS\FIRSTENERGY\OHIO_Projects\60595883_FE_RVBLPK\2024_Siting\1_MXD\1_Siting_MXDs\RSS_Riverbend_Lincoln_Figure3_CandidateRoutesWConstraints.mxd

East Branch Crab Creek

Dry Run

54
47
43
49
42
41
48
34
40



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Legend

- Substation
- Existing 23 kV Subtransmission Line
- Existing 138 kV Transmission Line
- Candidate Route Segments
- Railroads
- Stream (National Hydrography Dataset)
- Historic Structure (OHPO)
- National Register Listing (OHPO)
- National Register Determinations of Eligibility (OHPO)
- Cemetery (OHPO)

Mahoning County Data

- Museum
- Monument
- Well
- Church
- School
- Residence
- National Wetland Inventory
- Parcel Owned by City
- Sensitive Land Use/Parks
- Land Bank Parcel
- Parcel Boundary

0 250 500 1,000 Feet

N

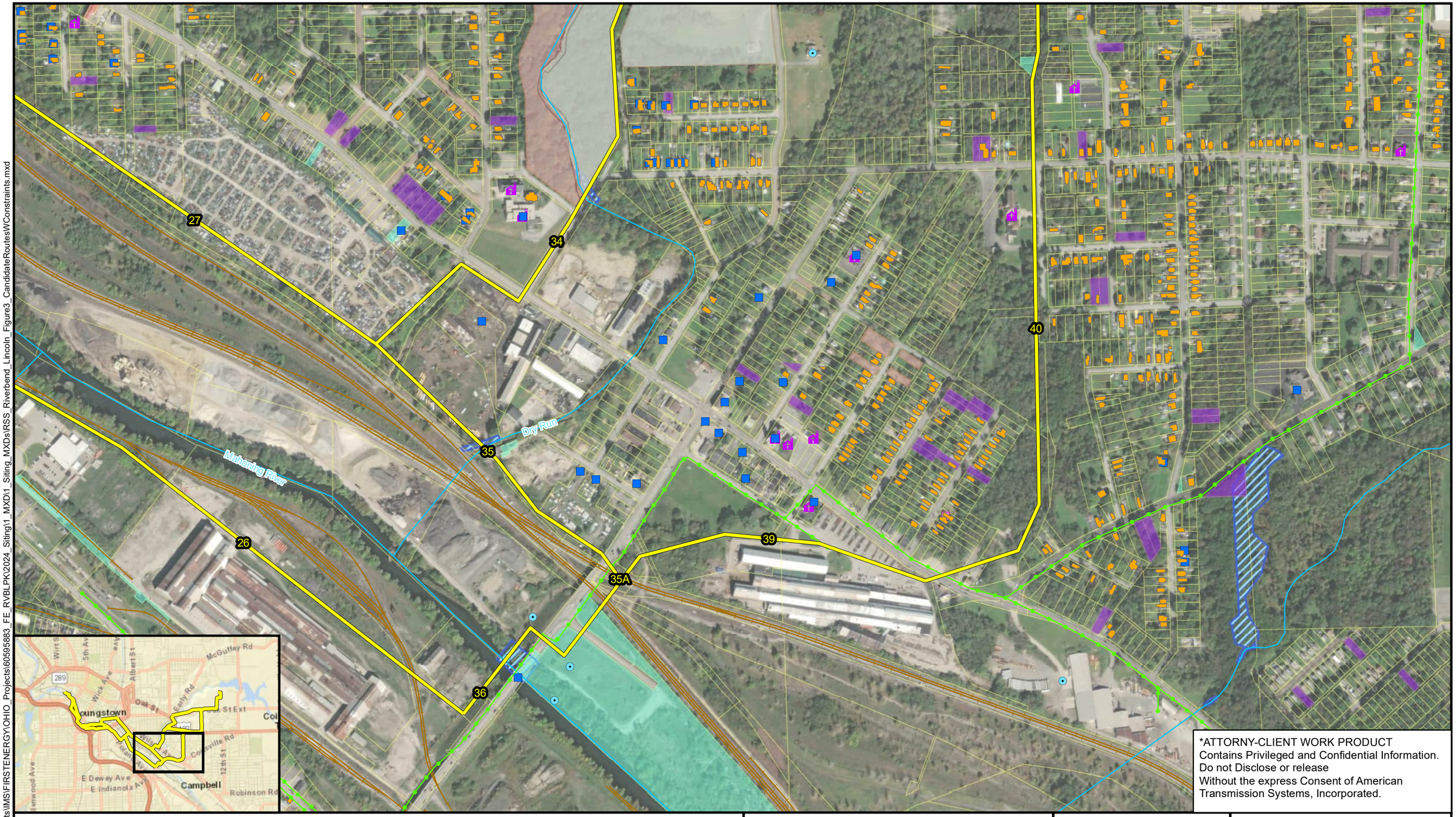
ATSI

American Transmission Systems, Inc.
Youngstown 138kV Reinforcement
Transmission Line Project
Figure 3
Candidate Routes with Identified Constraints
Page 2 of 5

Source: BMCD, ESRI, Mahoning County Auditor, USGS, OHPO, ArcGIS Online Bing Map Hybrid

Issued: April 23, 2025

URS Path: X:\DCS\Projects\IMS\FIRSTENERGY\OHIO_Projects\60595883_FE_RVBLPK\2024_Siting\1_MXD\1_Siting_MXDs\RSS_Riverbend_Lincoln_Figure3_CandidateRoutesWConstraints.mxd



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Legend

- Substation
- Existing 23 kV Subtransmission Line
- Existing 138 kV Transmission Line
- Candidate Route Segments
- Railroads
- Stream (National Hydrography Dataset)
- Historic Structure (OHPO)
- National Register Listing (OHPO)
- National Register Determinations of Eligibility (OHPO)
- Cemetery (OHPO)

Mahoning County Data

- Museum
- Monument
- Well
- Church
- School
- Residence
- National Wetland Inventory
- Parcel Owned by City
- Sensitive Land Use/Parks
- Land Bank Parcel
- Parcel Boundary

0 250 500 1,000 Feet

N

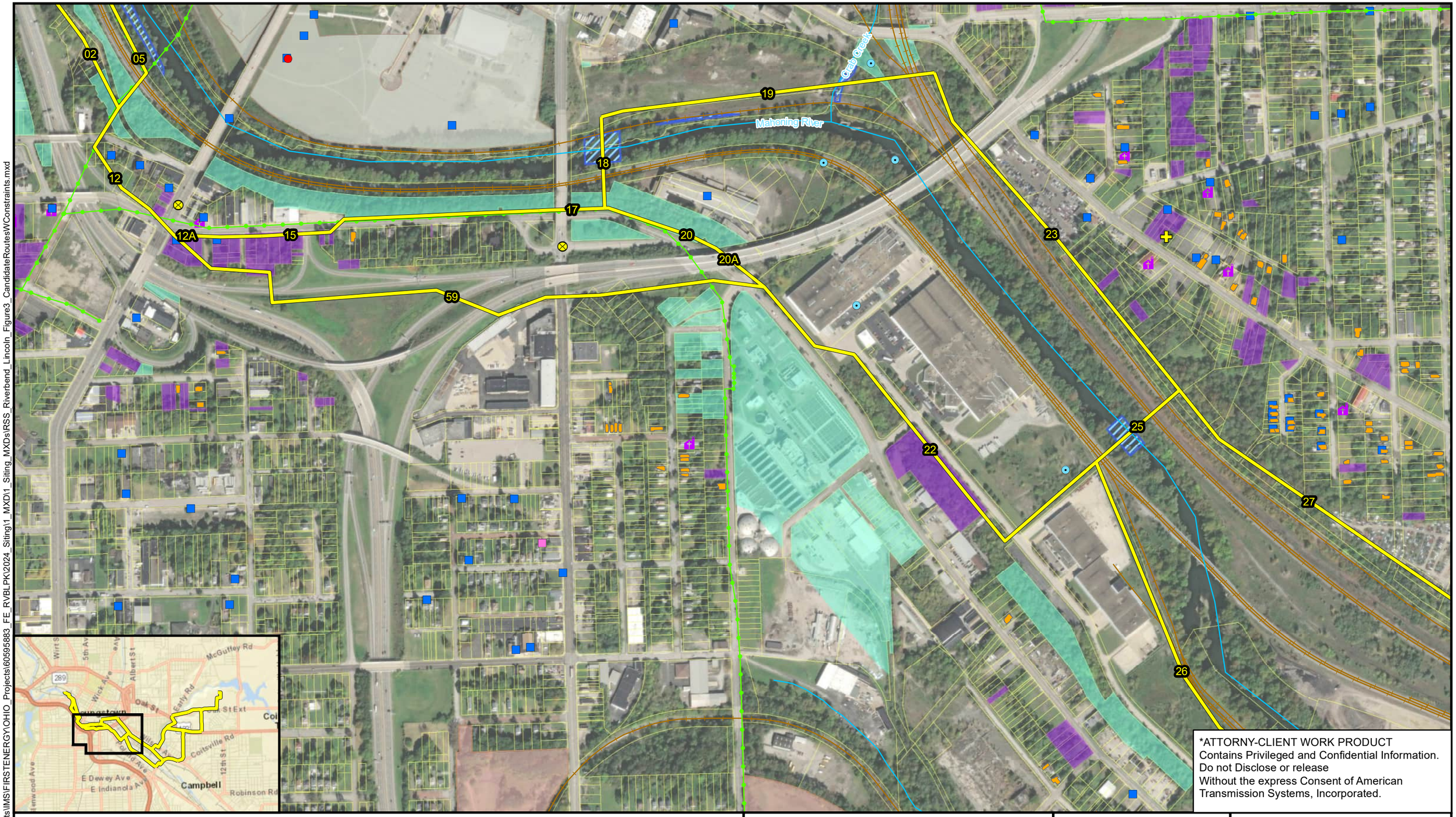
ATSI

American Transmission Systems, Inc.
Youngstown 138kV Reinforcement
Transmission Line Project
Figure 3
Candidate Routes with Identified Constraints
Page 3 of 5

Issued: April 23, 2025

Source: BMCD, ESRI, Mahoning County Auditor, USGS, OHPO, ArcGIS Online Bing Map Hybrid

URS Path: X:\DCS\Projects\IMS\FIRSTENERGY\OHIO_Projects\60595883_FE_RVBLPK\2024_Siting\1_MXD\1_Siting_MXDs\RSS_Riverbend_Lincoln_Figure3_CandidateRoutesWConstraints.mxd



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Contains Privileged and Confidential Information.
Do not Disclose or release
Without the express Consent of American Transmission Systems, Incorporated.

Legend

- Substation
- Existing 23 kV Subtransmission Line
- Existing 138 kV Transmission Line
- Candidate Route Segments
- Railroads
- Stream (National Hydrography Dataset)
- Historic Structure (OHPO)
- National Register Listing (OHPO)
- National Register Determinations of Eligibility (OHPO)
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- Land Bank Parcel
- Parcel Boundary

0 250 500 1,000 Feet

N

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American Transmission Systems, Inc.
Youngstown 138kV Reinforcement
Transmission Line Project
Figure 3
Candidate Routes with Identified Constraints
Page 4 of 5

Source: BMCD, ESRI, Mahoning County Auditor, USGS, OHPO, ArcGIS Online Bing Map Hybrid

Issued: April 23, 2025

URS Path: X:\DCS\Projects\IMS\FIRSTENERGY\OHIO_Projects\60595883_FE_RVBLPK\2024_Siting\1_MXD\1_Siting_MXDs\RSS_Riverbend_Lincoln_Figure3_CandidateRoutesWConstraints.mxd

Riverbend Substation

01

01A

01B

03

02A

02

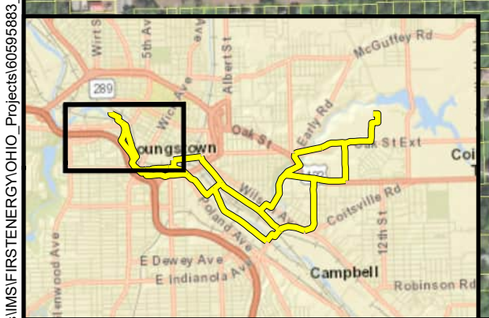
05

12

15

19

Mahoning River



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Legend

- Substation
- Existing 23 kV Subtransmission Line
- Existing 138 kV Transmission Line
- Candidate Route Segments
- Railroads
- Stream (National Hydrography Dataset)
- Historic Structure (OHPO)
- National Register Listing (OHPO)
- National Register Determinations of Eligibility (OHPO)
- Cemetery (OHPO)

Mahoning County Data

- Museum
- Monument
- Well
- Church
- School
- Residence
- National Wetland Inventory
- Parcel Owned by City
- Sensitive Land Use/Parks
- Land Bank Parcel
- Parcel Boundary

0 250 500 1,000 Feet

N

ATSI

American Transmission Systems, Inc.
Youngstown 138kV Reinforcement
Transmission Line Project
Figure 3
Candidate Routes with Identified Constraints
Page 5 of 5

URS Path: X:\DCS\Projects\IMS\FIRSTENERGY\OHIO_Projects\60595883_FE_RVBLPK\2024_Siting\1_MXD\1_Siting_MXDs\RSS_Riverbend_Lincoln_Figure3_CandidateRoutesWConstraints.mxd

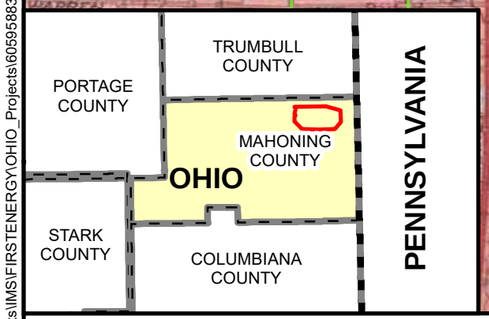
Source: BMCD, ESRI, Mahoning County Auditor, USGS, OHPO, ArcGIS Online Bing Map Hybrid

Issued: April 23, 2025

Riverbend Substation

Lincoln Park Substation

01 01B 02 12 12A 15 17 20 20A 59 22 25 27 34 26 36 39 40 41 48 49 54 55



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Legend

- Substation
- Existing 23 kV Subtransmission Line
- Existing 138 kV Transmission Line
- Candidate Route Segments

0 750 1,500 3,000 Feet

N

ATSI

American Transmission Systems, Inc.
Youngstown 138kV Reinforcement
Transmission Line Project
Figure 4
Routes Selected for Further Evaluation

Source: BMCD, ESRI, ARCGIS Online World Street Map

Issued: April 23, 2025

URS Path: X:\DCS\Projects\IMS\FIRSTENERGY\OHIO_Projects\60595883_FE_RVBLPK\2024_Siting\1_MXD\1_Siting_MXDs\RSS_Riverbend_Lincoln_Figure4_SelectedRoutes.mxd

Riverbend Substation

Lincoln Park Substation

TRUMBULL County

PORTAGE County

MAHONING County

OHIO

STARK County

COLUMBIANA County

PENNSYLVANIA

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Legend

- Substation
- Existing 23 kV Subtransmission Line
- Existing 138 kV Transmission Line
- Railroad
- Alternate Route
- Common Route
- Preferred Route

0 750 1,500 3,000 Feet

N

ATSI

American Transmission Systems, Inc.
Youngstown 138kV Reinforcement
Transmission Line Project
Figure 5
Preferred and Alternative Routes

Source: BMCD, ESRI, ARCGIS Online World Street Map

Issued: April 23, 2025

URS Path: X:\DCS\Projects\IMS\FIRSTENERGY\OHIO_Projects\60595883_FE_RVBLPK\2024_Siting\1_MXD\1_Siting_MXDs\RSS_Riverbend_Lincoln_Figure5_Pref&AltRoutes.mxd

APPENDIX

APPENDIX 1: ODOT APPROVAL FOR I-680

Miller, Brian

From: Thomas.Brett@dot.ohio.gov
Sent: Thursday, May 9, 2024 8:55 AM
To: Miller, Brian; Denyse.Click@dot.ohio.gov
Cc: Humphrys, Scott M
Subject: RE: ODOT / FE Permit Application #23-22760 - Youngstown

Follow Up Flag: Follow up
Flag Status: Flagged

This Message Is From an External Sender

This message came from outside your organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Report Suspicious

Brian,

ODOT has no objection to the proposed route for work to be completed as part of the Riverbend-Lincoln Park Transmission Line Project involving work in the IR-680 right of way between South Ave. and Market Street as described
on the map and plan submitted for ODOT right of way permit application 23-22760 which is under review at this time.

Please let me know if I can be of additional assistance.

Tom Brett
ODOT District 4
Permit Coordinator

Department of Transportation

From: Miller, Brian <brian.miller1@aecom.com>
Sent: Monday, May 6, 2024 2:19 PM
To: Click, Denyse <Denyse.Click@dot.ohio.gov>; Brett, Thomas <Thomas.Brett@dot.ohio.gov>
Cc: Humphrys, Scott M <shumphrys@firstenergycorp.com>
Subject: RE: ODOT / FE Permit Application #23-22760 - Youngstown

Hi Denyse and Thomas,

I wanted to follow up from our previous call on April 25 to thank you again for your availability and support. It was greatly appreciated!

Also, I wanted to follow up with our discussion as I believe you were going to confirm if you are able to publish a comment for approval of the general route location within the ODOT permitting system. Is that possible?

Thanks again,

Brian J. Miller
Project Manager / Senior Ecologist

M +1-412-667-9172
brian.miller1@aecom.com

AECOM
707 Grant Street
5th Floor
Pittsburgh, PA
aecom.com

NOTE: Upcoming Time Off
April 9th; April 16th, April 18th, and April 19th.
June TBD

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-----Original Appointment-----
From: Miller, Brian
Sent: Wednesday, April 24, 2024 7:40 AM
To: Miller, Brian; denyse.click@dot.ohio.gov; thomas.brett@dot.ohio.gov
Cc: Armstrong, Bradley; Humphrys, Scott M; Janis, Tracey J; Ruggiero, Augustine (Henslee, Dianna L); Barman, Nicholas J; Baker, Robert T (Tyler); Rhoades, Troy K.; jpollard@burnsmcd.com
Subject: ODOT / FE Permit Application #23-22760 - Youngstown
When: Thursday, April 25, 2024 9:00 AM-9:30 AM (UTC-05:00) Eastern Time (US & Canada).
Where: Microsoft Teams Meeting

Denyse/Thomas,

Thank you for providing your availability to discuss the components of this Project per coordination with Brad Armstrong regarding Permit Application #23-22760.

Thank you,

Brian J. Miller
Project Manager / Senior Ecologist

M +1-412-667-9172
brian.miller1@aecom.com

AECOM
707 Grant Street
5th Floor
Pittsburgh, PA
aecom.com

4906-4-05 ELECTRIC GRID INTERCONNECTION

(A) Description of Proposed Transmission Lines

(A)(1): The Project will be installed utilizing a combination of steel structures with concrete foundations and wood pole equivalent steel structure construction. The exact number and location of structures along the centerline of the ROW will be determined during detailed engineering design, if the Board approves the Project.

(A)(1)(a): The Project will be designed for and operated at 138 kV.

(A)(1)(b): The Project will use 795 kcmil 26/7 Aluminum Conductor Steel Reinforced, one conductor per phase. The Project will also use SFPOC SFSJ-J-6441 Optical Ground Wire ("OPGW") in the static wire position atop the transmission structures for lightning protection.

In Substitute House Bill 15, effective August 14, 2025, the Ohio General Assembly amended Chapter 4906 of the Ohio Revised Code to require consideration of advanced transmission technologies in applications to site transmission lines. Although the Project's design and RSS were completed before the effective date of House Bill 15, the implementation of advanced technologies was considered and will be implemented as part of this Project. OPGW will be installed from Lincoln Park Substation to Riverbend Substation. The OPGW will serve as lightning protection as well as a communication pathway between substations. OPGW enables remote power system monitoring, relay protection, and network communications through high-speed data transmission. It provides real-time data exchange for system protection schemes and SCADA, improving system reliability and operational flexibility. OPGW offers a reliable communication path with minimal maintenance. It enables critical power functions like remote monitoring, fault detection, and real-time data communication.

The proposed new transmission line will be supported on multiple steel structure types. The general features of these structures are described in the following sections.

1. For tangent configurations on the project, **Exhibits 5-1** and **5-2** conceptually show typical single wood pole equivalent (steel) tangent structures. These typical structures will consist of a single steel pole with three horizontal braced-post insulators to support the transmission conductors in a delta configuration. These tangent structures may be used on line angles between 0° and 2° and will have distribution underbuild and/or communication facilities where necessary.

2. For line angle configurations on the project, **Exhibits 5-3** and **5-4** conceptually show single steel pole structures atop drilled shaft concrete foundations with conductors supported in a vertical configuration on porcelain/glass insulators. **Exhibit 5-3** may be used on line angles between 0° and 30° and **Exhibit 5-4** may be used on line angles between 30° and 50°. These structures will have distribution underbuild and/or communication facilities where necessary.

3. **Exhibits 5-5** and **5-6** Figures 5-1D and 5-1E conceptually show deadend steel pole structures atop drilled shaft concrete foundations. **Exhibit 5-5** shows a deadend steel pole structure with conductors supported in a vertical configuration on porcelain/glass insulators and may be used on line angles between 0° and 60°. **Exhibit 5-6** shows a deadend steel pole structure with conductors supported in a vertical configuration on porcelain/glass strain insulators installed on

arms, and it may be used on line angles between 0° and 90°. These structures will have distribution underbuild and/or communication facilities where necessary.

4. **Exhibits 5-7** conceptually shows a unitized switch structure atop a drilled shaft foundation with conductors supported in a vertical configuration on porcelain/glass strain insulators. This structure may be used on a line angle of 0°. This structure is not anticipated to have any distribution underbuild or communication facilities.

Although it is not anticipated, the design or ROW conditions may dictate that other types of structures need to be utilized. If these unanticipated conditions arise, they will be addressed on a case-by-case basis.

(A)(1)(c): The excavation for each concrete foundation will be approximately 10 feet in diameter and approximately 35 feet deep.

(A)(1)(d): No underground cables are associated with this Project; therefore, this section is not applicable.

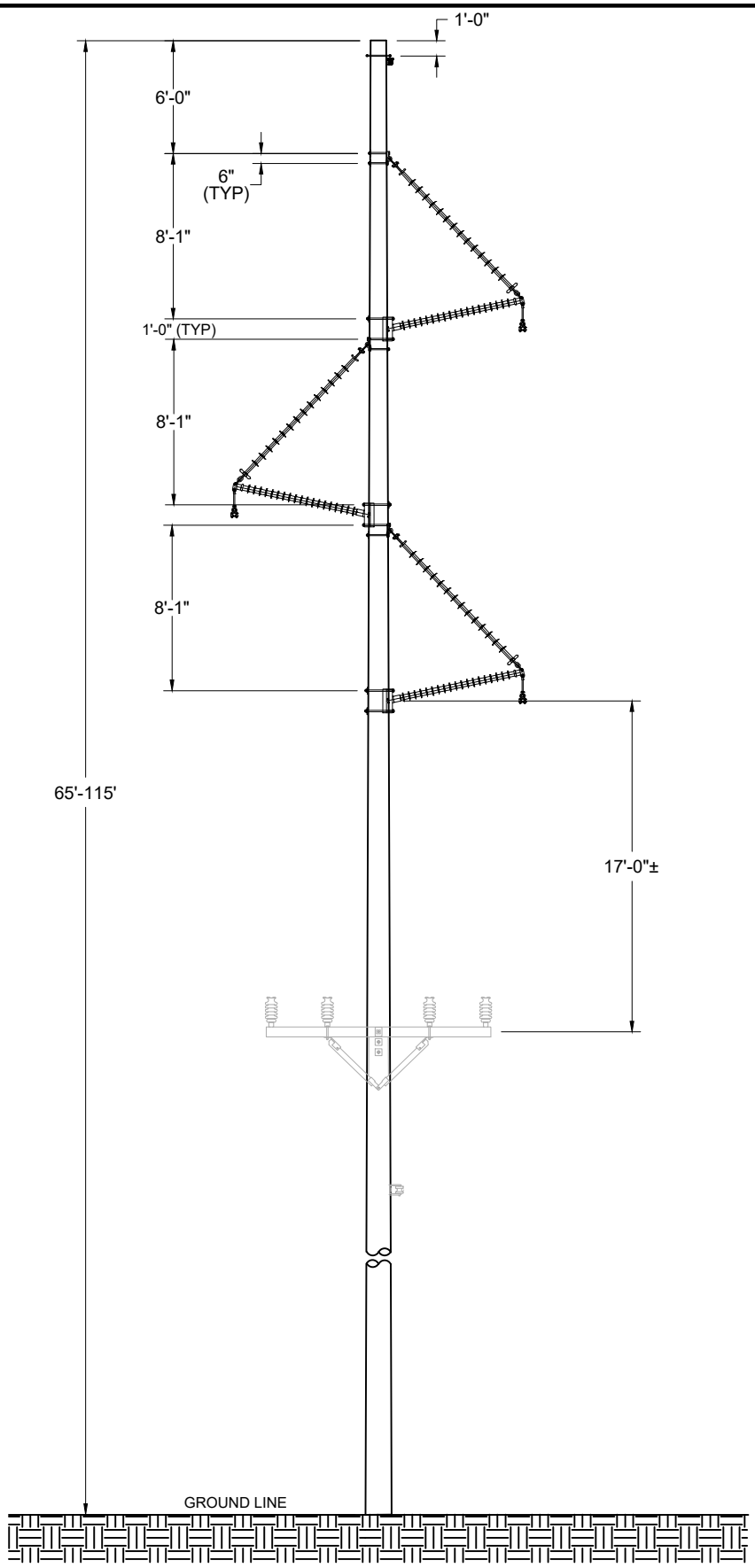
(A)(1)(e): No other major equipment or special structures are required for the Project.

(A)(2): No new electric power transmission substations are proposed for this Project.

(A)(3): Not Applicable as this is an electric transmission line.

(B) ELECTRIC GENERATION FACILITIES

Not Applicable as this is an electric transmission line.



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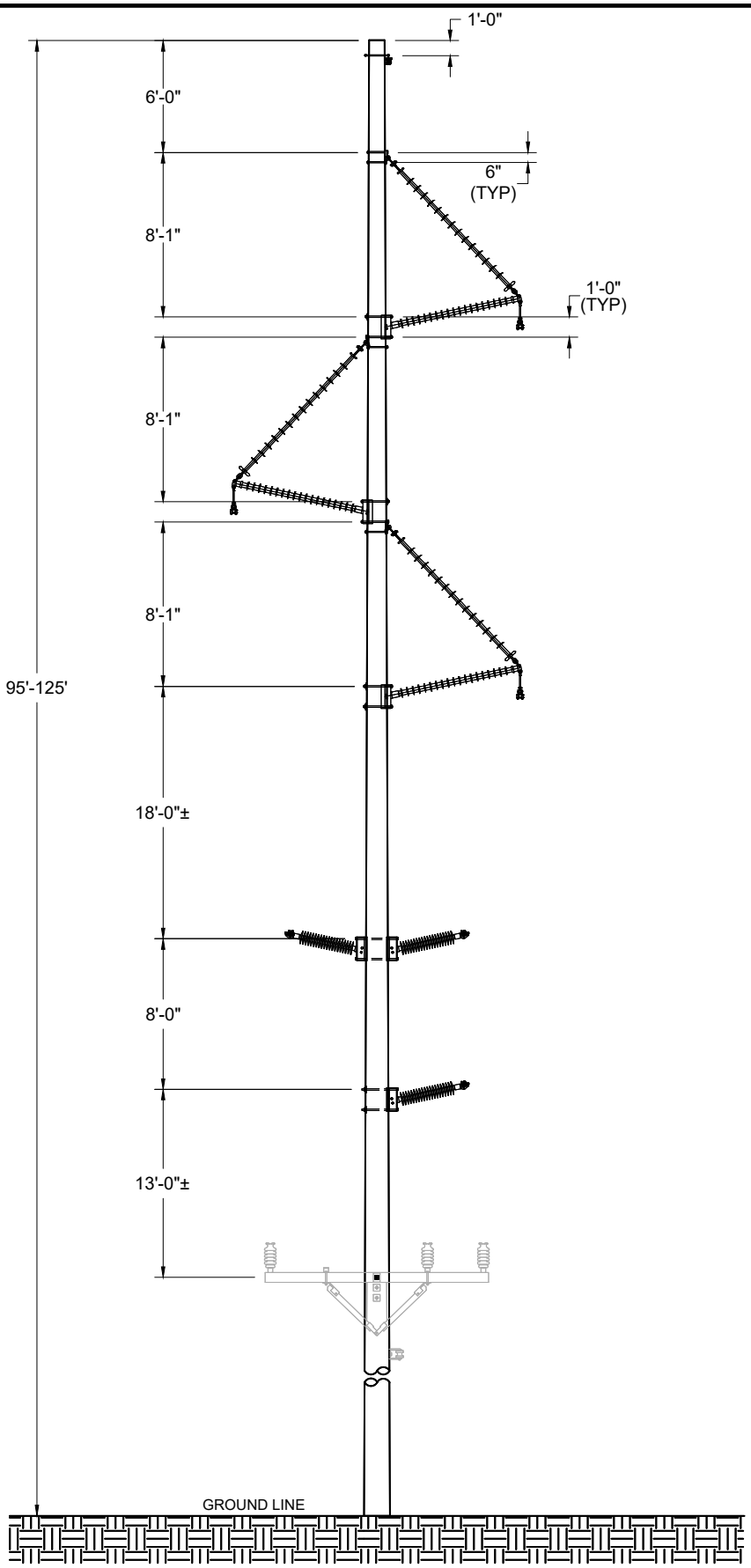
YOUNGSTOWN 138kV
REINFORCEMENT PROJECT

SINGLE CIRCUIT WOOD POLE EQUIVALENT STRUCTURE
BRACED POST DELTA SINGLE POLE 0°–2°

EXHIBIT 5–1

NOT TO SCALE

PAPER SIZE: 8.5X11



ATSI
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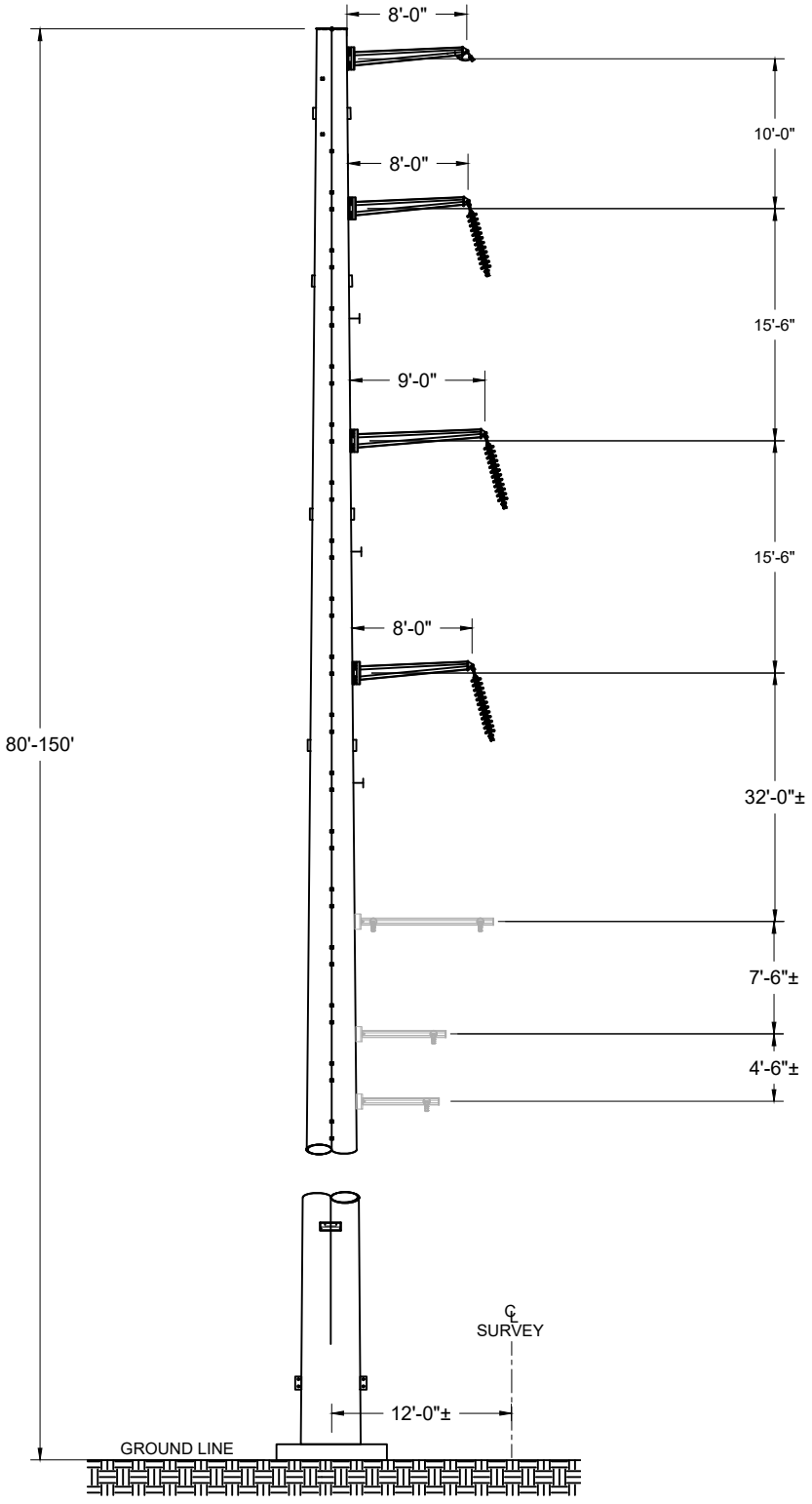
YOUNGSTOWN 138kV
REINFORCEMENT PROJECT

SINGLE CIRCUIT WOOD POLE EQUIVALENT STRUCTURE
BRACED POST DELTA SINGLE POLE 0°–2°

EXHIBIT 5–2

NOT TO SCALE

PAPER SIZE: 8.5X11



PAPER SIZE: 8.5X11

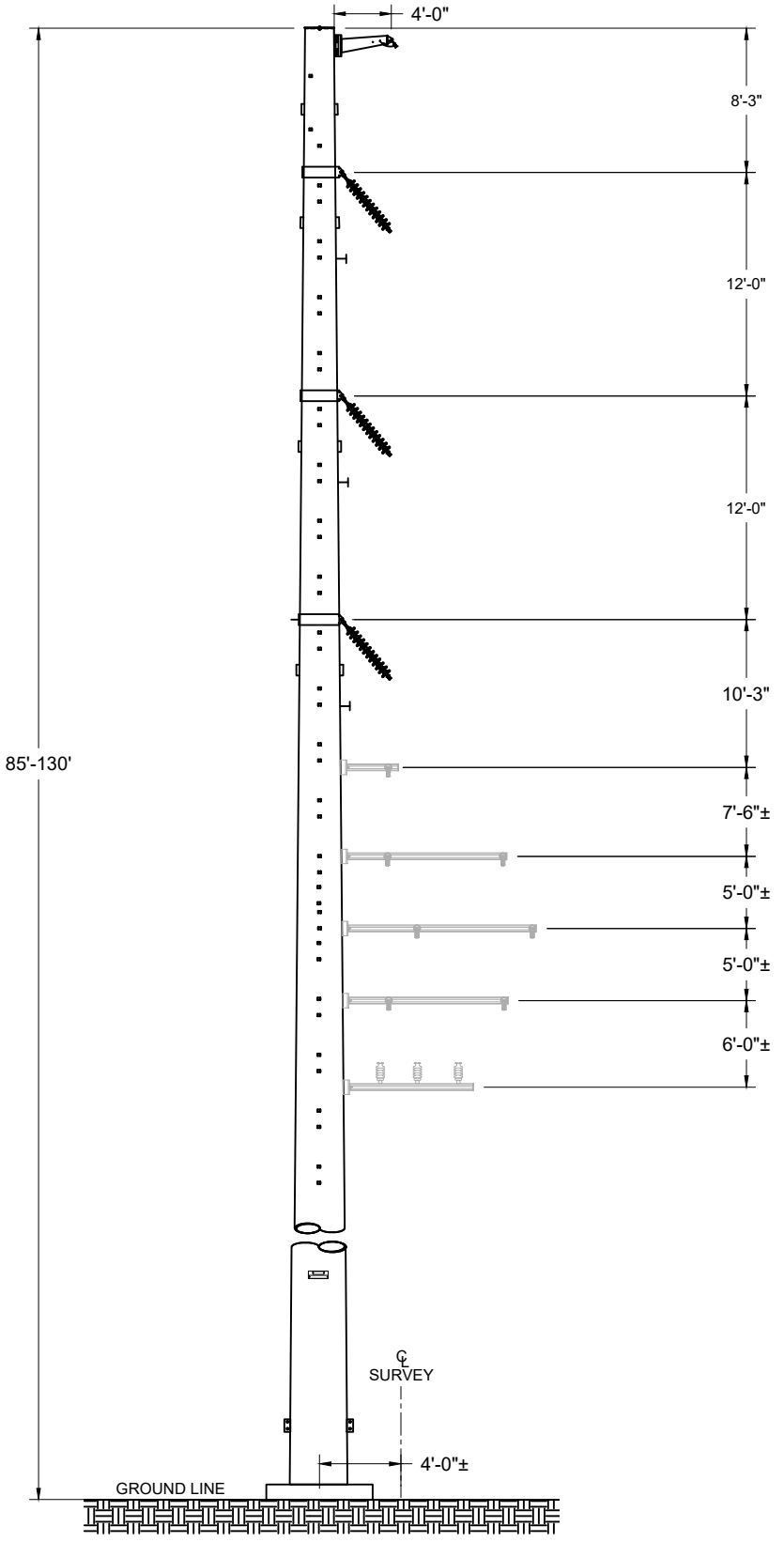
NOT TO SCALE

ATSI
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YOUNGSTOWN 138kV
REINFORCEMENT PROJECT

SINGLE CIRCUIT TUBULAR STEEL STRUCTURE
SUSPENSION SINGLE POLE 0°–30°

EXHIBIT 5–3



PAPER SIZE: 8.5X11

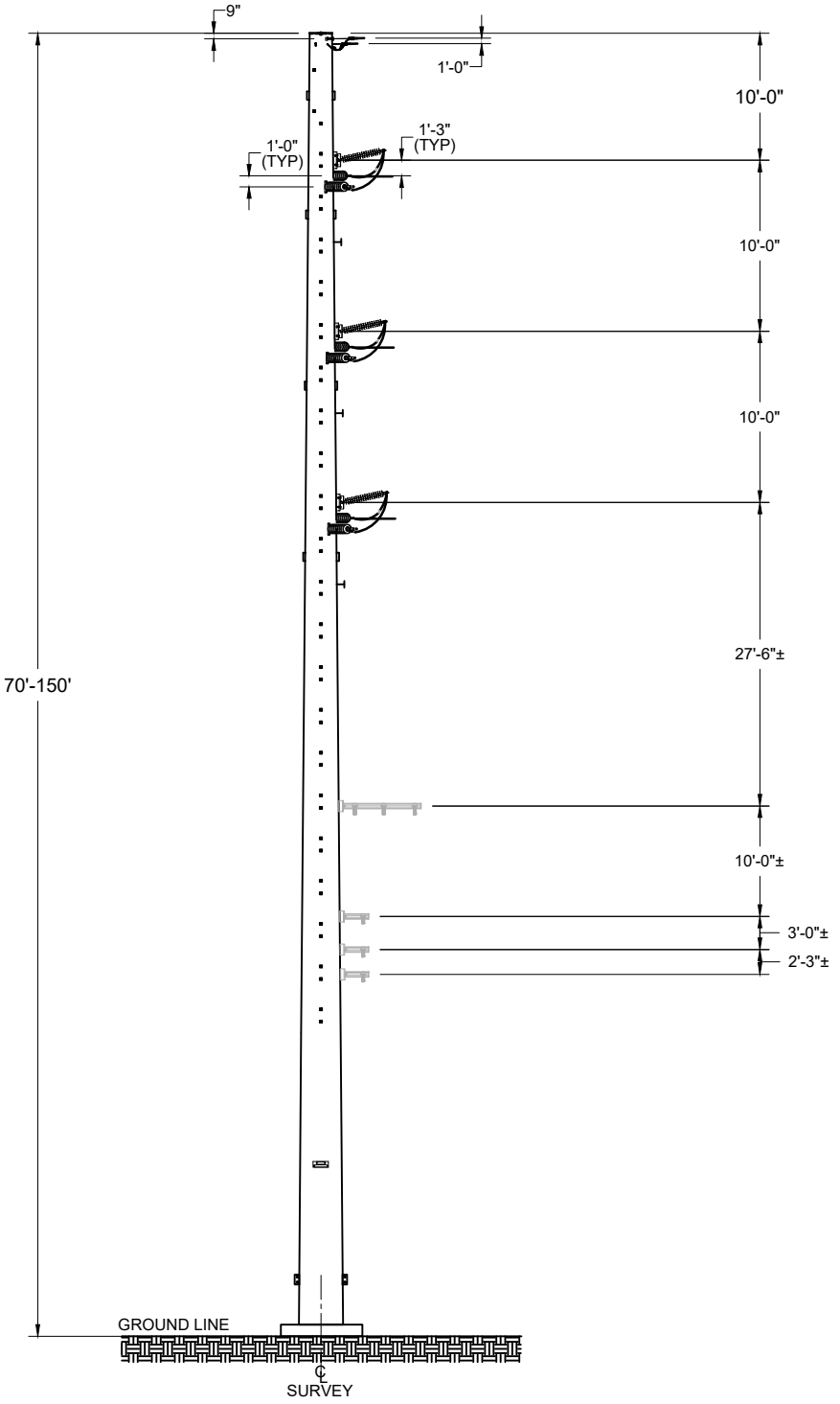
NOT TO SCALE

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YOUNGSTOWN 138kV
REINFORCEMENT PROJECT

SINGLE CIRCUIT TUBULAR STEEL STRUCTURE
SUSPENSION SINGLE POLE 30°–50°

EXHIBIT 5–4



PAPER SIZE: 8.5X11

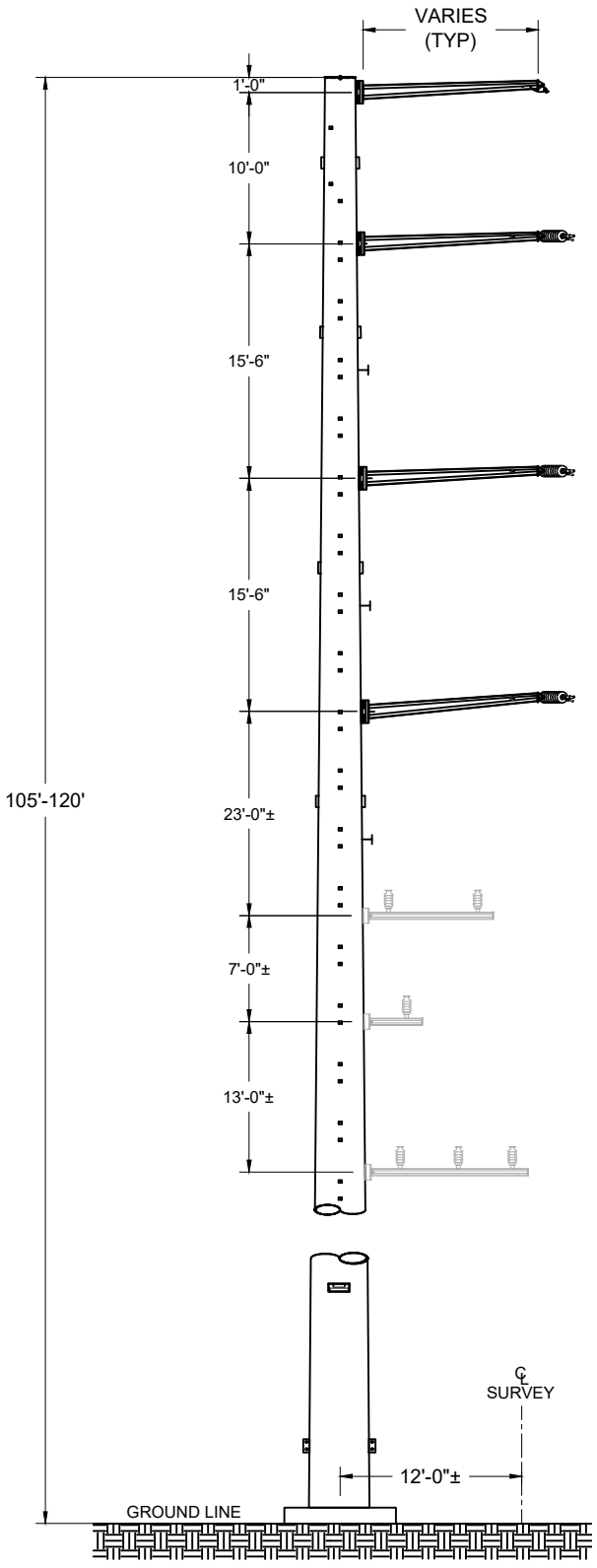
NOT TO SCALE

ATSI
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YOUNGSTOWN 138kV
REINFORCEMENT PROJECT

SINGLE CIRCUIT TUBULAR STEEL STRUCTURE
DEADEND SINGLE POLE 0°–60°

EXHIBIT 5–5



PAPER SIZE: 8.5X11

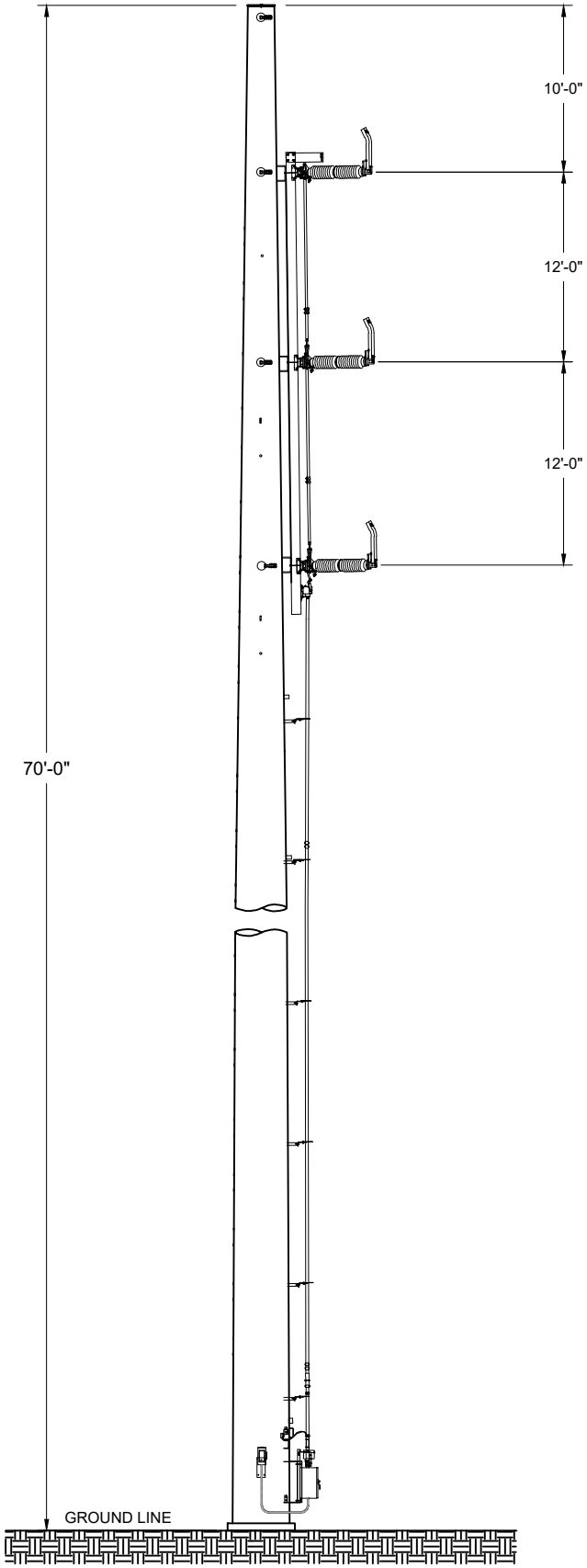
NOT TO SCALE

ATSI
American Transmission Systems, Inc.

YOUNGSTOWN 138kV
REINFORCEMENT PROJECT

SINGLE CIRCUIT TUBULAR STEEL STRUCTURE
STRAIN ON ARMS SINGLE POLE 0°–90°

EXHIBIT 5–6



PAPER SIZE: 8.5X11

NOT TO SCALE

ATSI
American Transmission Systems, Inc.

YOUNGSTOWN 138kV
REINFORCEMENT PROJECT

SINGLE CIRCUIT TUBULAR STEEL STRUCTURE
UNITIZED SWITCH

EXHIBIT 5–7

4906-4-06 ECONOMIC IMPACT AND PUBLIC INTERACTION

(A) Ownership of Proposed Facility

ATSI will construct, own, operate, and maintain the proposed Project.

The Proposed Route will consist of new construction located primarily in new ROWs acquired for the Project. In general, Applicant will obtain through negotiation with property owners any easements necessary for the ROW for the Project, although acquiring property rights by fee purchase of land or other types of agreements may occur.

Although Applicant endeavors to reach an amicable agreement with all impacted property owners, it is possible that some property owners may not be willing to provide Applicant with the necessary easements on negotiated terms. Where the necessary ROW for the transmission line along the route approved by the OPSB cannot be obtained through negotiations, appropriation of the necessary ROW will be pursued.

(B) Capital and Intangible Costs Estimate for Electric Power Transmission Facility Alternatives

(B)(1): Table 6-1 includes estimates of applicable intangible and capital costs for both the Proposed Route of the Project. Cost estimates are provided only for those items listed in the rule that are applicable to this Project.

Table 6-1
Estimate of Applicable Intangible and Capital Costs for Proposed Route

FERC Account Number	Description	Proposed Route
350	Land and Land Rights, Engineering Construction, etc.	$5,138,000
352	Structures and Improvements	$1,047,000
353	Substation Equipment	$9,909,000
354	Towers and Fixtures	$0
355	Poles and Fixtures	$27,875,000
356	Overhead Conductors and Devices	$1,783,000
359	Right-of-Way Clearing, Roads, Trails or Other Access	$6,521,000
TOTAL		$52,273,000

(B)(2): Table 6-2 includes comparison of similar projects constructed and placed in-service.

Table 6-2: Comparable Cost (by Mile) of Similar Transmission Line Projects

Project	Case No.	Mileage	Cost	Cost Per Mile
Youngstown Reinforcement	24-0603-EL-BTX	6.25	$41,317,000	$6,610,720
Highland-Magellan #2	21-0015-EL-BLN	3.5	$9,201,000	$ 2,628,857
Wood County Reinforcement	18-1335-EL-BTX	6.1	$16,328,000	$ 2,676,721

All projects are unique and to compare them on a cost per mile basis can present challenges. For example, the Highland-Magellan #2 project is 3.5 miles long with 2 miles of the line being built on an existing open arm position while the Wood County Reinforcement Project is closer in length to the Proposed Project, it was constructed primarily with wood. The Proposed Project is designed for all steel structures which increases the material cost and costs relating to below grade construction activities, including foundations and access road construction. The estimated cost of the right-of-way acquisition associated with the Proposed Project is substantially higher than the other two projects.

(B)(3): If the entirety of the Project, past and future, was to be spent in 2025, the Present Worth would be estimated at $49,500,000. This was calculated using the present year's estimated cost and applying a 3% adder per year, back to 2018, to the Project's expenditures and total cost estimates.

(C) Operation and Maintenance Expenses

(C)(1): As this is a new construction project, there are no estimated annual operation and maintenance expenses for the first two years of operation.

(C)(2): As this is a new construction project, consisting solely of steel structures, the anticipated operation or maintenance costs for this Project, outside of emergency repairs due to outside forces such as weather related incidents or vehicle strike incidents, are not on a regularly scheduled program but rather consist of inspections of both ariel and foundation as well as steel galvanization coating on an as needed basis and are incorporated where and when applicable. The costs associated with inspections and possible galvanization coating would not be materially different than ATSI's existing facilities with similar materials. In addition, there are no comparable new construction projects to compare to as noted in section 4906-04-06(B)(2), because of the transition from wood pole construction to steel pole construction and all associated ancillary costs.

(C)(3): As stated in 4906-04-06(B)(3) and (C)(2), the present worth of the Project is $49,500,000 and annualized expenditures for operating and maintenance costs and any associated costs are on an as needed basis and not subject to a regularly scheduled program.

(D) Economic Impact

(D)(1): The estimated annual total construction and operation payroll is $27,301,264 and the estimated present worth of construction and operation payroll is $25,473,004.

(D)(2): As a result of the construction and operation of this Project, it is estimated that there will be 23 jobs created for 2027, and 56 jobs created for 2028. These jobs will be temporary in nature to support the construction of the Project.

(D)(3): The Proposed Route is located within Mahoning County. ATSI will pay personal property taxes on utility facilities in this jurisdiction. The approximate annual property taxes associated with the Proposed Route over the first year after the Project is completed are $4,158,440.

Based on the 2028 tax rates, the following information includes preliminary estimates for these taxing authorities:

Proposed Route:

Mahoning County	$ 612,007
Youngstown City -Youngstown City School District	$ 3,038,334
City of Campbell – Campbell City School District	$ 508,106
TOTAL	**$ 4,158,440**

(D)(4): As a result of the construction and operation of the project, the economic impact of the proposed facility on local commercial and industrial activities will be focused to the time of construction. As mentioned in 4906-04-06 (D)(2), there will be jobs created for this project but temporary in nature. As the Project is now, the majority of the labor to construct this Project will be from outside the Project Area. This will not have a long term direct benefit to the local commercial and industrial activities but it will provide a temporary economic impact increase while construction is ongoing. These temporary direct benefits include the day to day activities of outside workers such as hotel stays, restaurant usage, grocery store purchases and fuel purchases. The indirect benefits of the Project on the local commercial and industrial activities come in the form of electrical reliability resulting in less down time due to power outages.

(E) Relevant Public Interaction

(E)(1): ATSI has communicated the project with local government officials, proposed impacted landowners, adjacent landowners and other community stakeholders. ATSI held two PIMs in the Project Area. ATSI notified the public by mailing the required notice letters to residents, tenants, and elected officials, providing public notice of a public information open house in newspapers of general circulation in the Project area. ATSI also made information available to the public outside of the confines of the in-person PIMs by creating and maintaining the Project website, as well as conducting a virtual open house. The first PIM was held June 12, 2024 at the Taylor History Center in Youngstown, Ohio. Detailed maps of the proposed candidate route options were presented. Property boundaries were indicated on the mapping with unique parcel

identification numbers referenced to ownership spreadsheet. Virtual desktop and website information for the Project was also made available at the open house via desktop computers as well as provided links provided to impacted landowners within the notification letters prior to the open house event. The virtual desktop and website environment allows the public to explore many elements of the Project without physical requiring to be present at the scheduled open house event. At the first open house event, six people attended the PIM. ATSI also held general discussion with public officials in the project area, including representatives from the City of Youngstown. From the comments received and the meetings with local officials and stakeholders, a second PIM was held June 4, 2025, at the Taylor History Center in Youngstown, Ohio where refined detailed mapping of the Proposed and Alternate Routes were presented. At the second PIM, there were 16 people that attended and signed in and several people that did not sign in.

ATSI will also complete all necessary notice requirements associated with the filing of this application and the subsequent public and adjudicatory hearings as required by the OPSB's rules.

During the construction of this Project, ATSI will regularly provide Project updates on its website; retain ROW land agents that discuss Project timelines, construction and restoration activities with property owners and other concerned members of the public; and convey this information to affected owners and tenants. A copy of informational materials that were available at the June 12, 2024 PIM are included in **Appendix 6-2**, and a copy of informational materials that were available at the June 4, 2025 PIM are included in **Appendix 6-3**.

As a part of the property owner notification process, communications to affected property owners will take place no less than 7 days prior to construction. The communication to affected property owners will also contain the information describing the project with applicable construction dates. The communication will also contain the following Complaint Resolution Procedure:

> *Should you have any questions, concerns or grievances regarding the Project, please contact the ATSI's Project Hotline at (888) 311-4737 or transmissionprojects@firstenergycorp.com.*
>
> *ATSI will promptly review and provide a response to received questions, concerns or grievances. If ATSI determines that the concern or grievance is a result of Project construction, ATSI will seek to repair, resolve or negotiate applicable mitigation as soon as practicable.*

(E)(2): FirstEnergy Service Company, as the parent company of ATSI, currently self-insures against Commercial general liability and property damage exposure, as well as Commercial liability exposure in connection with its automobile operations. ATSI purchases excess Commercial General Liability insurance covering indemnity to at least $35,000,000 in excess of $10,000,000. This insurance is on a per occurrence basis and is arranged under a broad form that includes automobile and contractual liability. Present coverage is arranged with AEGIS and is renewable on a year-to-year basis.

(E)(3): Upon finalization of the selected route for a Project and before construction or mobilization of equipment to the Project area, ATSI will work directly with jurisdictions (county, township, and/or municipalities) to identify approved hauling routes. The hauling plan will be coordinated with the jurisdictions to evaluate the delivery and transportation routes, potential impacts to roadways, and possible mitigation measures or avoidance roadways, bridges, and other areas of restrictions, including hauling weight limits and size (height/width). Due to the low volume events including mobilization and demobilization of equipment and adherence to jurisdictions' requests for road use timeframes (i.e. outside of peak traffic hours), ATSI anticipates only minor impacts to traffic during construction. During construction, the type of vehicles and equipment that will be utilized on the public roadways will be limited to state legal weight and size. For jurisdictions that identify roadways or bridges with restricted limits or not non-bounded roads, ATSI will either avoid use and/or limit traffic on roadways to meet the jurisdiction request.

Preliminary hauling routes, which are subject to change, are anticipated to originate off either interstate, US routes, state routes, and/or county highways (such as I-680, US 422, US 62, SR 289, and/or SR 193) to get close to the Project area while reducing impacts to local roads to the extent feasible. Upon exit from these highways, hauling routes are anticipated to take direct routes and follow local roadways along the Project corridor.

Local roadways anticipated to be requested for use will likely include: W Rayen Avenue, N West Avenue, Martin Luther King Jr Blvd, Mahoning Avenue, Oak Hill Avenue, Pike Street, E Woodlan Avenue, Ridge Avenue, Poland Avenue, Hadnet Drive, Alpine St, Performance Plaza, Center Street, E Lawrence St, Wilson Avenue, Coitsville Road, Courtland Avenue, Glastone Street, McCarthney Road, Lamar Avenue, and Oak Street Extension. Most of these existing public roads do not appear to exhibit underlying issues, other than normal aging and surface wear. To document the conditions of road prior to use, pre and post construction haul route video filming will be completed as a record of baseline conditions that will be provided to jurisdictions upon request.

Several bridges could be potentially utilized for construction hauling purposes and ATSI would limit the use of these bridges based on conditions and approval from local jurisdictions to meet load capacity requirements (weight, height, and width) limitations. Bridges that may be investigated and/or utilized for this Project include Mahoning Avenue Bridge, Marshall Street Bridge, Market Street Bridge, and Center Street Bridge. All of these bridges are located within or adjacent to areas of industrial development that utilize similar routes for their equipment needs. Bridges will only be utilized upon approval from the local jurisdictions to make sure that the bridges are operational and can hold the weight capacity requirements for the equipment ATSI intends to utilize for the Project.

(E)(4): The Applicant will obtain the necessary permits from ODOT and local jurisdictions (county, township, and/or cities) to work within existing road ROWs and to transport Project-related equipment. While vehicles of legal weight and size will primarily make up construction traffic, some oversize or wide-load vehicle transportation will be required for equipment and specific gen-tie line components, in which case Special Hauling Permits will be obtained from

ODOT. Regarding Mahoning County, a road use maintenance agreement will be obtained for use of County roadways for hauling equipment to the Project site. In addition to the required transportation permits, the Applicant will coordinate with authorities for proper traffic control during the construction phase.

(E)(5): Not Applicable as this is an electric transmission line.

(E)(6): The Project is in the cities of Campbell and Youngstown within Mahoning County, Ohio.

(E)(7): ATSI contacted several local officials to discuss the Project. **Appendix 6-1** provides a list of the local public officials who have been contacted to date or who will be provided a digital or hard copy of the Application, once accepted by the OPSB.

(E)(8): Not Applicable as this is an electric transmission line.

APPENDIX 6-1
Youngstown 138kV Reinforcement Project
Project Officials Contacted or to be Served a Copy of the Certified Application

Mahoning County

Board of County Commissioners
Mr. Geno DiFabio
21 W Boardman Street, 2nd Floor
Youngstown, OH 44503
330-740-2130
Geno.DiFabio@mahoningcountyoh.gov

Board of County Commissioners
Ms. Carol Rimedio-Righetti
21 W Boardman Street, 2nd Floor
Youngstown, OH 44503
330-740-2130
crighetti@mahoningcountyoh.gov

Board of County Commissioners
Mr. Anthony Traficanti
21 W Boardman Street, 2nd Floor
Youngstown, OH 44503
330-740-2130
atraficanti@mahoningcountyoh.gov

Mahoning County
Engineer's Office
Mr. Patric T. Ginnetti, P.E., P.S.
940 Bears Den Road
Youngstown, OH 44511
330-799-1581
atraficanti@mahoningcountyoh.gov

Mahoning County Planning Commission
Mr. Micheal P. O'Shaughnessy,
Executive Director
50 Westchester Drive, Suite 203
Youngstown, OH 44515
330-270-2890
moshaughnessy@mahoningcountyoh.gov

Mahoning County Soil & Water District
Ms. Kathleen Vrable-Bryan,
District Admin.
850 Industrial Road
Youngstown, OH 44509
330-740-7995
kvrable-bryan@mahoningcountyoh.gov

City of Youngstown

City of Youngstown Mayor's Office
Mayor Jamael Tito Brown
26 S Phelps St., 1st Floor
Youngstown, OH 44503
330-742-8701
mayor@youngstownohio.gov

Youngstown City Council
Mr. Thomas Hetrick, President
26 S Phelps St., 6th Floor
Youngstown, OH 44503
330-506-6646
tomhetrick@youngstownohio.gov

Youngstown City Council
Mr. Julius T. Oliver
1st Ward
26 S Phelps St., 6th Floor
Youngstown, OH 44503
330-259-6158
joliver@youngstownohio.gov

Youngstown City Council
Mr. Jimmy Hughes
2nd Ward
26 S Phelps St., 6th Floor
Youngstown, OH 44503
330-272-5108
jhughes@youngstownohio.gov

Youngstown City Council
Ms. Samantha Turner,
3rd Ward
26 S Phelps St., 6th Floor
Youngstown, OH 44503
330-398-9514
sturner@youngstownohio.gov

Youngstown City Council
Mr. Mike Ray
4th Ward
26 S Phelps St., 6th Floor
Youngstown, OH 44503
330-792-5956
mikeray@youngstownohio.gov

Youngstown City Council
Mr. Patrick A. Kelly
5th Ward
26 S Phelps St., 6th Floor
Youngstown, OH 44503
330-423-2112
pkelly@youngstownohio.gov

Youngstown City Council
Ms. Anita Davis
6th Ward
26 S Phelps St., 6th Floor
Youngstown, OH 44503
330-207-0302
adavis@youngstownohio.gov

Youngstown City Council
Ms. Amber White
7th Ward
26 S Phelps St., 6th Floor
Youngstown, OH 44503
330-259-6023
awhite@youngstownohio.gov

Youngstown Community Planning
and Economic Development
Ms. Nikki Posterli, Director
26 S Phelps Street, 4th Floor
Youngstown, OH 44503
330-742-8704
nposterli@youngstownohio.gov

City of Campbell

City of Campbell Mayor's Office
Mayor George Levendis
351 Tenney Avenue
Campbell, OH 44405
330-755-1451
glevendis@campbellohio.gov

Campbell City Council Office
Mr. Joseph Mazzocca Jr.
Council President
351 Tenney Avenue
Campbell, OH 44405
330-755-1663
jmazzocca1987@gmail.com

Campbell City Council Office
Mr. Timothy O'Bryan
1st Ward
351 Tenney Avenue
Campbell, OH 44405
330-755-1663
tim-obryan@hotmail.com

Campbell City Council Office
Mr. Steve Cappitte
2nd Ward
351 Tenney Avenue
Campbell, OH 44405
330-755-1663
stevecappitte@gmail.com

Campbell City Council Office
Mr. Ryan Young.
3rd Ward
351 Tenney Avenue
Campbell, OH 44405
330-755-1663
rjy3212@yahoo.com

Campbell City Council Office
Mr. Robert Stanko
4th Ward
351 Tenney Avenue
Campbell, OH 44405
330-755-1663
robertstanko@ymail.com

Mr. James Conroy
City of Campbell Zoning
Inspector
351 Tenney Avenue
Campbell, OH 44405
330-755-1451
jconroy@campbellohio.gov

Libraries

Youngstown and Mahoning
County District Public Library
Ms. Aimee Fifarek,
Executive Director
305 Wick Avenue
Youngstown, OH 44503
330-744-8636
reference@libraryvisit.org

Youngstown 138-kV Reinforcement Project

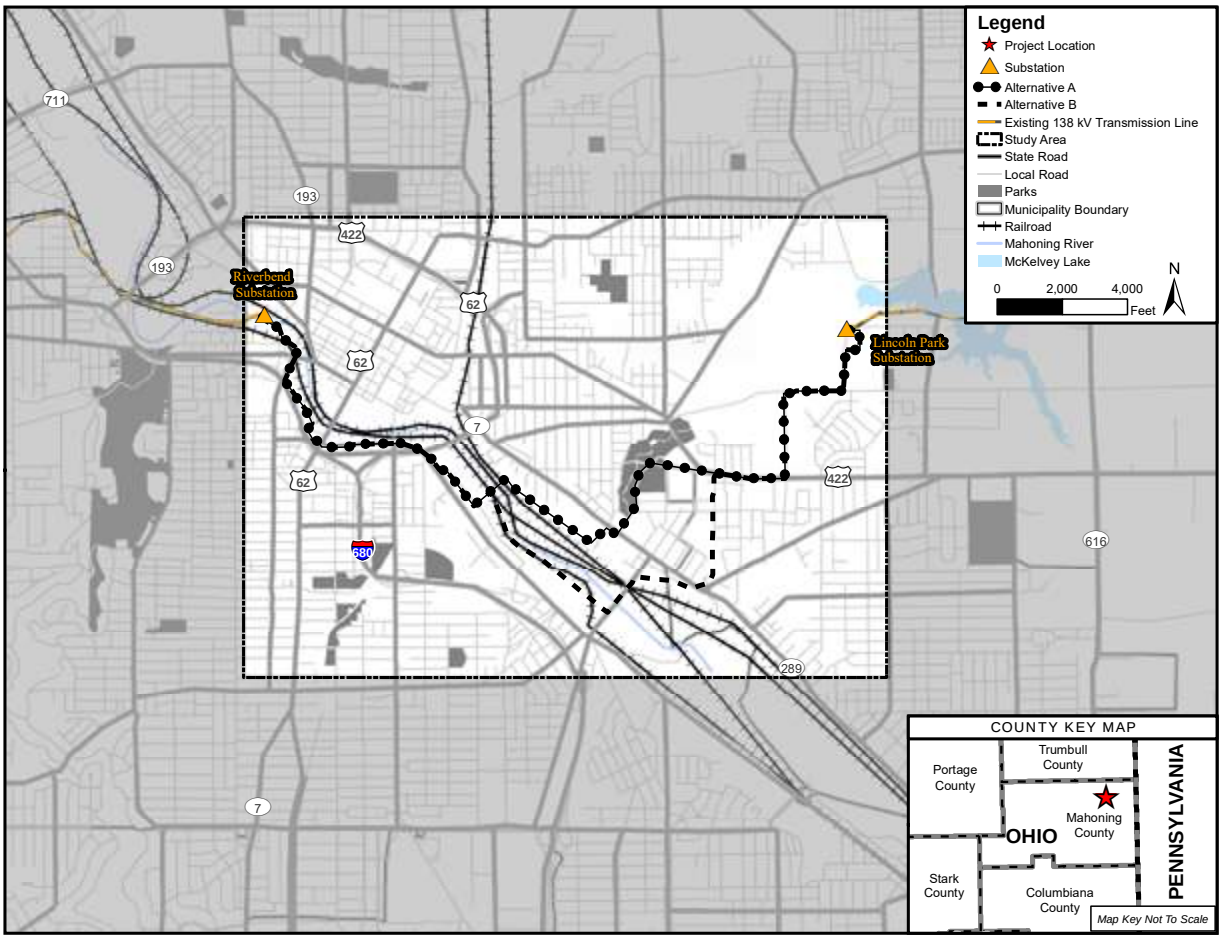
Enhancing Service Reliability and Performance for 15,000 Ohio Edison Customers in the City of Youngstown and Surrounding Area

At FirstEnergy, it's our responsibility to deliver the power our customers depend on in their daily lives. American Transmission Systems, Incorporated (ATSI), a transmission subsidiary of FirstEnergy, is proposing to construct a new 138-Kilovolt (kV) transmission Line and upgrade two existing substations in the Youngstown, Ohio, area. The project is expected to enhance service reliability and performance for approximately 15,000 customers and support residential and business expansion plans in the area.

Project Overview

ATSI will build a new approximately 6-mile, 138-kV transmission line between the existing Lincoln Park and Riverbend substations, both located in Youngstown. In addition, the Riverbend Substation will be upgraded to an advanced design that will help reduce the frequency and duration of power outages, and the Lincoln Park Substation will be upgraded to accommodate the new transmission line.

Continued on back



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Along with increased transmission system reliability, the project will support the existing 23-kV distribution network that provides electric service to thousands of residential customers as well as St. Elizabeth Hospital, Youngstown State University and many commercial and industrial facilities in the area. The project will also alleviate voltage concerns in the Lincoln Park service area, which provides electric service to portions of Ward 1 and Ward 2.

Line Siting and Approvals

ATSI will ultimately file an application and seek authorization from the Ohio Power Siting Board ("OPSB") for this project. In addition, all required permits and authorizations from federal, state and local agencies will be secured to complete the project.

Multiple routes for the transmission line will be carefully evaluated to avoid potentially sensitive areas and minimize impacts to landowners and the community. The project's two end points are illustrated on the accompanying map.

Easements

Single wood poles will support the majority of the new transmission line, with steel poles used where necessary. ATSI will negotiate with property owners to obtain the necessary agreements for right-of-way and vegetation management rights. Company representatives will work closely with local officials and affected landowners to keep them updated on the project.

Permitting

Detailed wetland, stream and other environmental and historical evaluations will be performed along the transmission line route. ATSI will obtain all permits required by state and federal agencies prior to construction.

About Energize365

Energize365 is a multi-year grid evolution program focused on transmission and distribution investments that will deliver the power FirstEnergy's customers depend on today while also meeting the challenges of tomorrow. With planned investments of $26 billion between 2024 and 2028, the program will create a smarter, more secure grid that will meet and exceed reliability targets and accommodate electric vehicles, the electrification of homes and businesses, and clean energy sources.

For more information and project updates, visit firstenergycorp.com/about/transmission_projects/ohio

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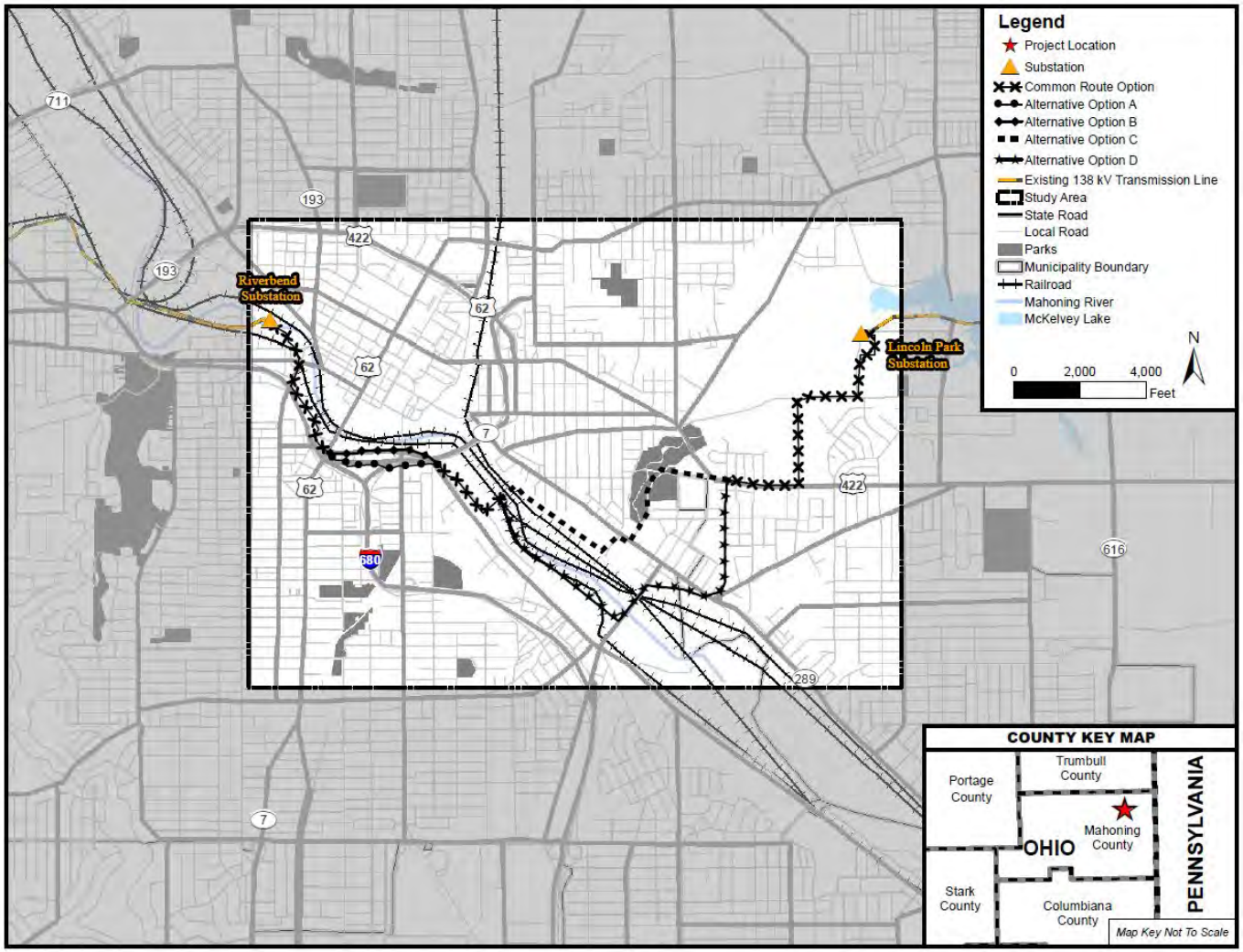


Youngstown 138-kV Reinforcement Project

Public Meeting
June 2024

ENERGIZE 365

Project Overview



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- An approximately six-mile, 138-kV transmission line connecting the Lincoln Park and Riverbend substations in Youngstown, Ohio
- Upgrades at both the Lincoln Park and Riverbend substations

Need and Benefits

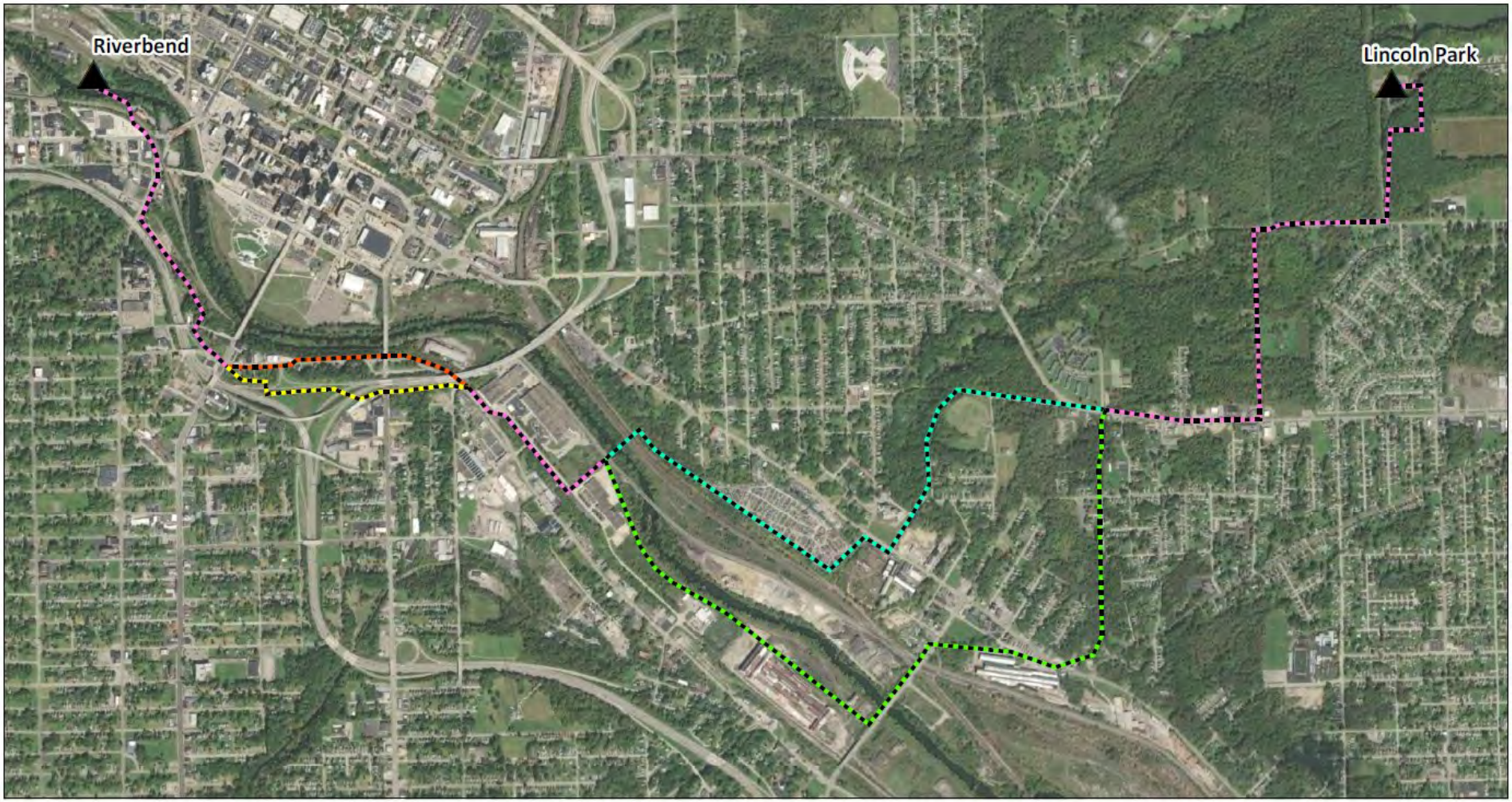
The project's objectives:

- **Provide a 138-kV source between the existing Lincoln Park and Riverbend substations to improve transmission system reliability**
- **Provide additional support for the existing 23-kV distribution network that provides electric service to thousands of residential customers as well as St. Elizabeth Hospital, Youngstown State University and many commercial and industrial facilities in the area**

These improvements will:

- **Reduce impacts on transmission and distribution customers and provide additional capacity for future load growth and economic development in the area as well as alleviate voltage concerns in the Lincoln Park service area, which provides electric service to portions of Ward 1 and Ward 2**

Alternate Routes



Engineering Design Structure Types

Steel Monopoles
Height: 60’-135’

Single Pole Wood Structures
Height: 61’-90’













Real Estate Negotiations

- **Right-of-way width (ROW) required for the transmission line is 65 feet, and in areas where steel poles may be utilized, the ROW needed may expand to 100 feet**
  - ATSI will negotiate with property owners to obtain any necessary easements or vegetation management rights to support the new transmission line.



- **Examples of land rights acquisition:**
  - Easement agreements
  - Priority tree rights
  - Access roads
- **ATSI's goal is to work with property owners to obtain all necessary rights to construct the Youngstown 138-kV Reinforcement Project. However, should that not occur, ATSI may seek these rights through eminent domain as a last resort.**

Vegetation Management

- **Proper vegetation management is an important part of ensuring electric system reliability.**
- **ATSI focuses on responsible vegetation management to create a sustainable, compatible low-growing habitat that supports reliable electric service.**



Environmental Permitting

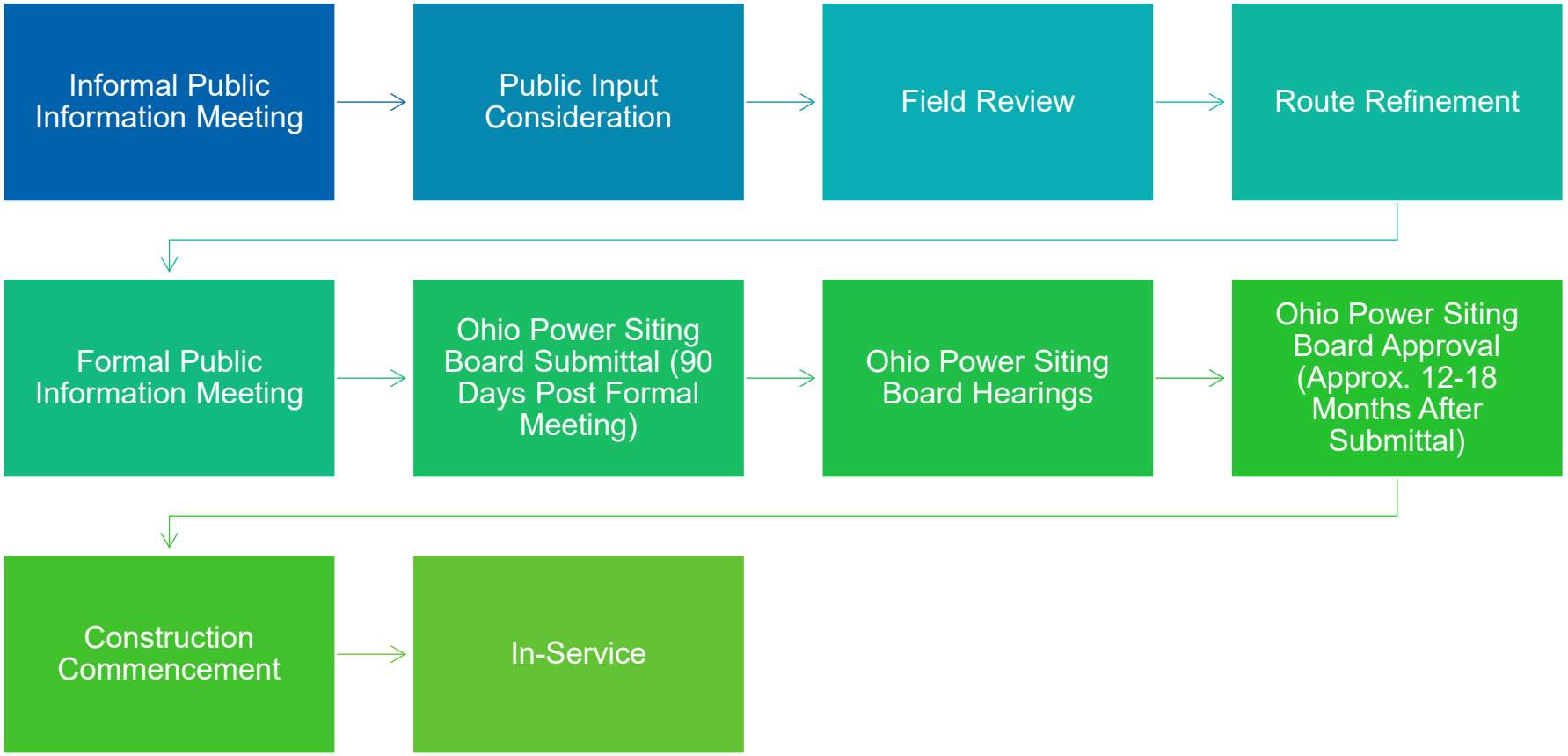
Principal Regulatory Agencies

- U.S. Army Corps of Engineers
- U.S. Fish & Wildlife Service
- Ohio Environmental Protection Agency
- Ohio Department of Natural Resources
- State Cultural Resource Agencies
- County and Municipal Agencies



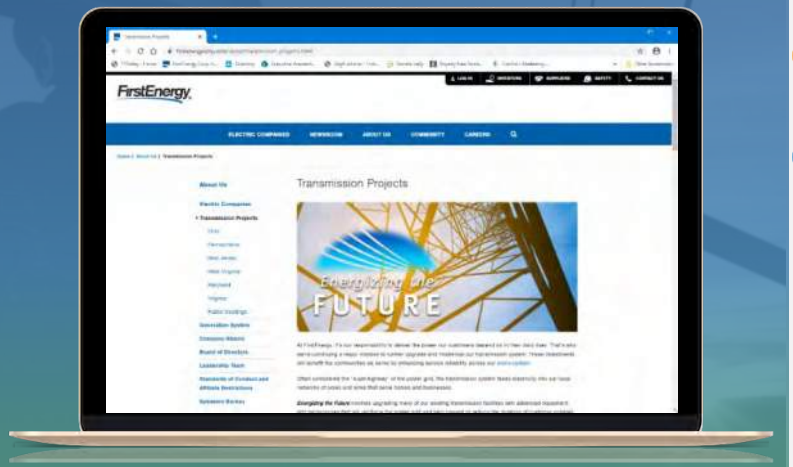


Project Siting Process



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Contact Information

- **Visit the project website for additional information**
- **Contact us if you'd like to schedule an individual meeting for further discussion**

Email: transmissionprojects@firstenergycorp.com

Phone: 1-888-311-4737

Website:
https://firstenergycorp.com/content/fecorp/about/transmission_projects/ohio/youngstown138.html

Virtual Public Meeting Room:

https://firstenergy.consultation.ai/youngstown138/

Interactive Map:

https://solutions.aecomonline.net/youngstown138/



What Are Electric and Magnetic Fields?

Electric and magnetic fields surround anything that generates, transmits, or uses electricity. **Electric fields** result from voltage that pushes electric current through an electrical wire. **Magnetic fields** are produced when electrical current flows through wires and electrical devices. Together, these electric and magnetic fields from electric power sources are commonly referred to as EMF.

Since electricity plays an important role in modern life and in almost everything we do, EMF can be found almost everywhere. The electricity system that is used to transmit and distribute electricity (e.g., transmission lines, distribution lines, and substations) is a source of EMF. When we use electricity in our homes, offices, schools, workplaces, hospitals, and public areas to power the many appliances, devices, and equipment we use for work, leisure, and transportation, EMF also are present.

Are There Guidelines That Limit Exposure to EMF?

There are no federal exposure limits in the United States and no state agency has adopted exposure limits based on a finding that EMF causes adverse health effects. Scientific organizations, however, have recommended exposure guidelines to protect the general public and workers from very high EMF levels, that have the potential to cause nerve and muscle stimulation, which are short-term and reversible effects. EMF levels found in our environment, including those near high-voltage power lines, however, are far too low to cause these effects.



Where Can I Find More Information?

Health Canada

http://healthycanadians.gc.ca/healthy-living-vie-saine/environment-environnement/home-maison/emf-cem-eng.php

National Cancer Institute

http://www.cancer.gov/cancertopics/factsheet/Risk/magnetic-fields

World Health Organization

http://www.who.int/peh-emf/en/

National Institute of Environmental Health Sciences

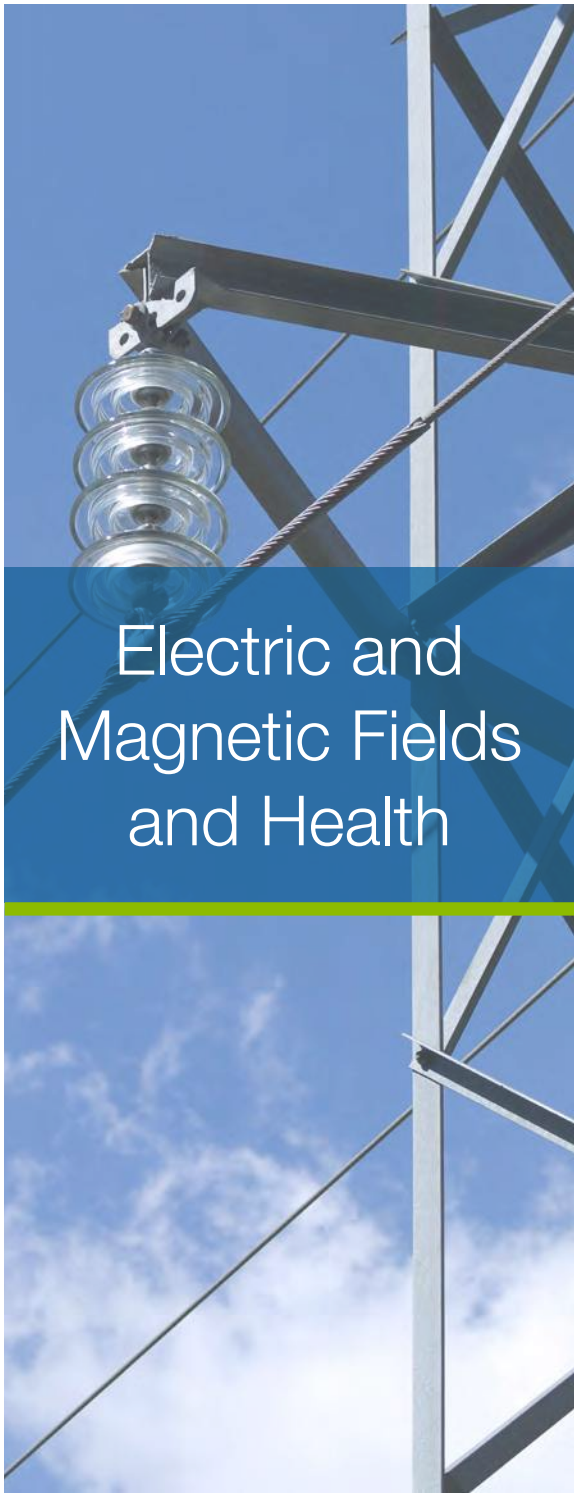
http://www.niehs.nih.gov/health/materials/electric_and_magnetic_fields_associated_with_the_use_of_electric_power_questions_and_answers_english_508.pdf

European Commission – SCENIHR

http://ec.europa.eu/health/scientific_committees/consultations/public_consultations/scenihr_consultation_19_en.htm

Exponent®

Prepared by Exponent for FirstEnergy | January 2016



Electric and Magnetic Fields and Health

How Is EMF Measured and What Are Typical Levels in the Home?

Electric fields are measured in units of volts per meter (V/m) and magnetic fields are measured in milligauss (mG), microtesla (μT) or millitesla (mT) (1 mG = 0.1 μT = 0.0001 mT). The highest levels of EMF are measured directly near the source, and decrease rapidly with distance. Since electric fields are easily blocked or weakened by walls or other objects, more research has been conducted on magnetic fields.

In our homes, magnetic fields are generated from appliances, the wiring that powers those appliances, the distribution lines that deliver electricity to the home, and any currents flowing on water pipes. Magnetic fields from nearby transmission lines also have the potential to contribute to the magnetic-field levels inside a home, but since magnetic fields decrease rapidly as you get farther away from the source, the contribution of transmission lines to a home's magnetic-field level may be less than from other closer sources. The typical average level of magnetic fields in homes in the United States measured away from appliances is approximately 1 mG, while in close proximity to common appliances that are in use, the magnetic-field level can range from tens to hundreds of mG (Table 1).



Table 1. Magnetic Fields Measured from Appliances

Source	Distance from Source*		
	6 inches (mG)	1 foot (mG)	2 feet (mG)
Can Opener	600	150	20
Vacuum Cleaner	300	60	10
Hair Dryer	300	1	–
Portable Heater	100	20	4
Electric Range	30	8	2
Dishwasher	20	10	4
Toaster	10	3	–
Coffee Maker	7	–	–

Source: EMF Questions and Answers (NIEHS, 2002)

* The numbers represent the median magnetic field (i.e., half of the appliances tested had higher levels and half had lower levels than those shown in the figure).

Equipment within substations also produces magnetic fields, but here too, the fields drop off quickly with distance. At the boundary of substation sites, the magnetic field from substation equipment is typically within the range of levels found inside our homes. The dominant source of magnetic fields near substation boundaries is the power lines serving the substation.



How Are Potential Health Effects Studied?

There are three main approaches that scientists use to study potential effects of exposure to any physical, chemical, or biological agent, including EMF. Over the past 35 years, thousands of studies have been published in research areas related to EMF.

Epidemiologic studies are conducted among people to observe if persons with a disease (such as cancer) experienced higher exposures to EMF than persons without that disease.

Laboratory animal studies (also called *in vivo* studies) are conducted in laboratory animals, most commonly mice and rats, to test whether extended exposures to high levels of EMF cause increased rates of disease or toxic effects.

Laboratory studies of cells and tissues (also called *in vitro* studies) are conducted to see if exposure to EMF can cause any changes in biological processes that could lead to disease.

How Are Scientific Conclusions Drawn from Health Studies?

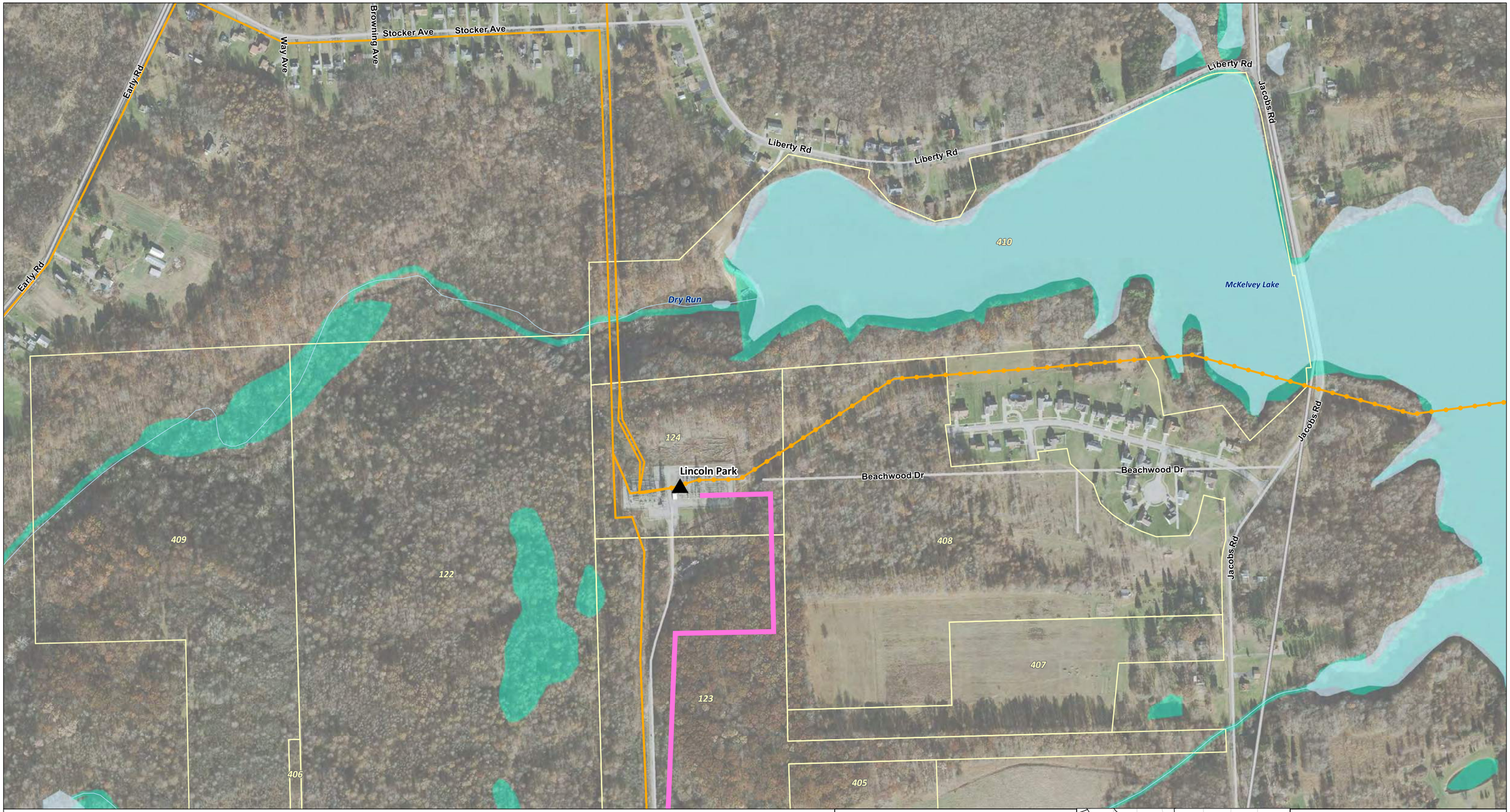
First and foremost, no single study or a selected small group of studies can form the sole basis of a valid scientific assessment. The method that scientists use to conduct health risk assessments involves the evaluation of all relevant studies in the three main research areas discussed above. The three areas have varying strengths and limitations, thus, they contribute different information to a scientific evaluation and have to be weighed together. Because epidemiologic studies are conducted among people, the main interest of health research, they provide highly relevant scientific evidence. *In vivo* studies can be well controlled by the investigators and can expose animals to high levels of exposure for long time periods up to the entire lifetime of the animals. While animal studies require extrapolation between species, these tests form the primary basis for assessing the safety of all drugs and medicines. *In vitro* laboratory studies may contribute to better scientific understanding of biological processes and potential exposure effects on a cellular level; however, because cells and tissues may not react the same way in experimental settings as in intact organisms, no direct conclusions can be drawn from *in vitro* studies about disease and adverse health effects. In the overall evaluation, scientists look for overall patterns within and across the three research areas. Epidemiology and *in vivo* studies have primary importance, while *in vitro* studies contribute secondary information in the assessment of scientific evidence. Studies also vary greatly in their quality, thus, each study contributes different weight in the overall evaluation. Higher quality studies contribute more weight, while lower quality studies contribute less weight, and studies with very poor methods may not contribute at all.



What Have Authoritative Scientific Organizations Concluded?

Numerous scientific organizations have assembled groups of independent scientists with expertise in a variety of disciplines to perform comprehensive reviews of EMF research. These organizations include the International Agency for Research on Cancer, the International Commission on Non-Ionizing Radiation, the National Institute of Environmental Health Sciences, the World Health Organization, and most recently in 2015, a Scientific Committee of the European Commission. Overall, the conclusions of these panels are consistent and can be summarized generally, as follows:

- The research does not support the conclusion that EMF causes any long-term, adverse health effects.
- Some epidemiologic studies have reported a statistical association between high, average magnetic-field levels and childhood leukemia. No authoritative agency has concluded, however, that magnetic fields cause childhood leukemia due to the limitations of these studies and the lack of evidence from laboratory studies.
- The *in vivo* studies, overall, do not report an increase in cancer among animals exposed to high levels of EMF even after lifetime exposures.
- The *in vitro* studies provide no explanation as to how magnetic fields could cause disease.



Existing Substation
Common Route Option
Existing Transmission Line (69 kV or lower)
Existing Transmission Line (138 kV)
Stream
Waterbody
NWI Wetland
Parcel Boundary

ATSI

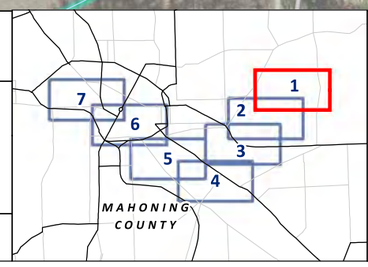
Transmission line routes are preliminary and subject to change

1 inch = 200 feet
when printed at 22x34

0 200 400 600
Feet

Imagery Source: NAIP, 2016

May 28, 2024



Aerial Map 1 of 7

ATSI
Youngstown 138 kV
Reinforcement Project

Youngstown 138-kV Reinforcement Project

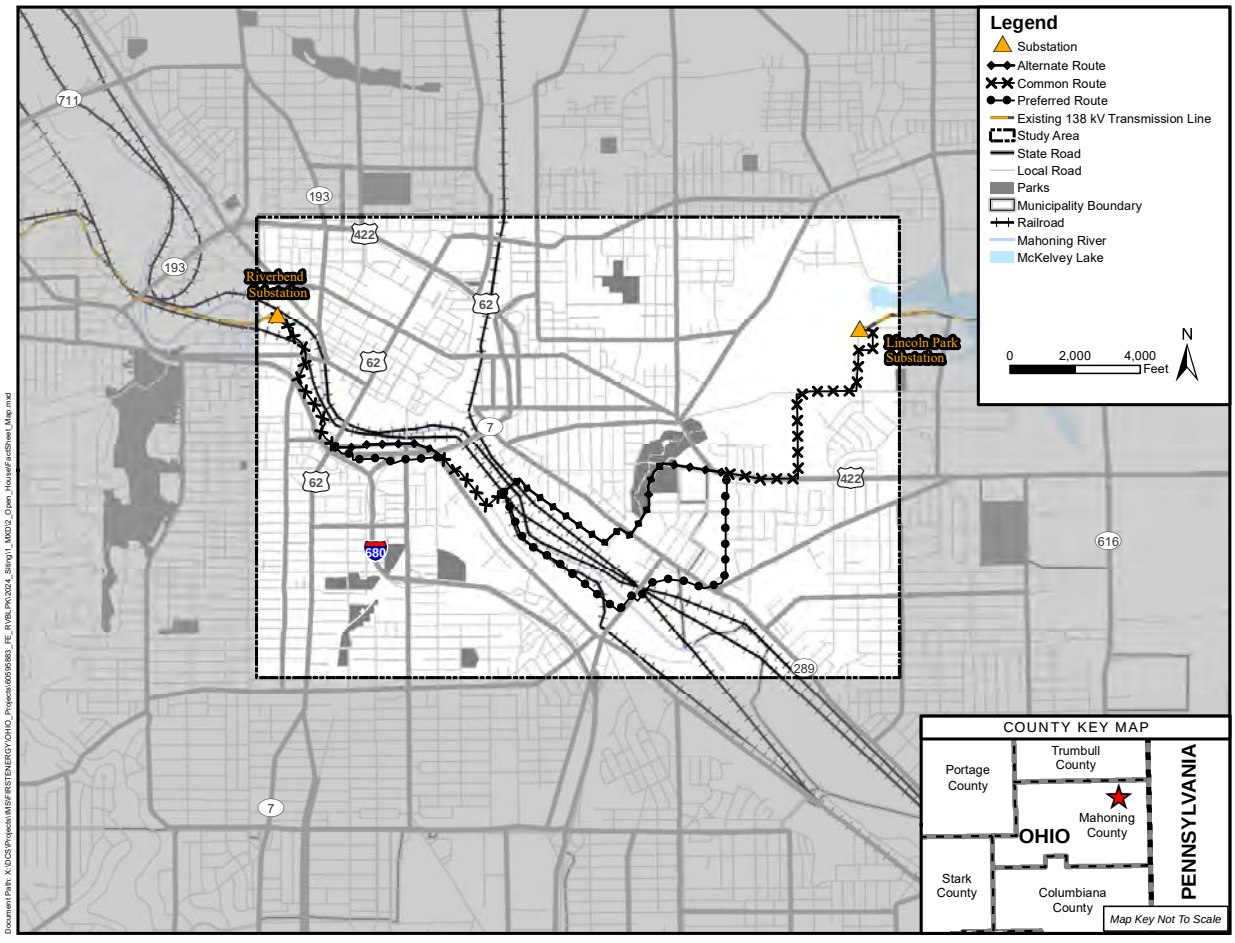
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ATSI will build a new approximately 6-mile, 138-kV transmission line between the existing Lincoln Park and Riverbend substations, both located in Youngstown. In addition, the Riverbend Substation will be upgraded to an advanced design that will help reduce the frequency and duration of power outages, and the Lincoln Park Substation will be upgraded to accommodate the new transmission line.

Continued on back



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American Transmission Systems, Inc.
a subsidiary of FirstEnergy Corp.

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Line Siting and Approvals

ATSI will ultimately file an application and seek authorization from the Ohio Power Siting Board ("OPSB") for this project. In addition, all required permits and authorizations from federal, state and local agencies will be secured to complete the project.

Multiple routes for the transmission line have been carefully evaluated to avoid potentially sensitive areas and minimize impacts to landowners and the community. The project's two end points and proposed routes are illustrated on the accompanying map.

Easements

Single steel monopoles will support the new transmission line. ATSI will negotiate with property owners to obtain the necessary agreements for right-of-way and vegetation management rights. Company representatives will work closely with local officials and affected landowners to keep them updated on the project.

Permitting

Detailed wetland, stream and other environmental and historical evaluations have been performed along the transmission line route. ATSI will obtain all permits required by state and federal agencies prior to construction.

About Energize365

Energize365 is a multi-year grid evolution program focused on transmission and distribution investments that will deliver the power FirstEnergy's customers depend on today while also meeting the challenges of tomorrow. With planned investments of $26 billion between 2024 and 2028, the program will create a smarter, more secure grid that will meet and exceed reliability targets and accommodate electric vehicles, the electrification of homes and businesses, and clean energy sources.

For more information and project updates, visit firstenergycorp.com/about/transmission_projects/ohio

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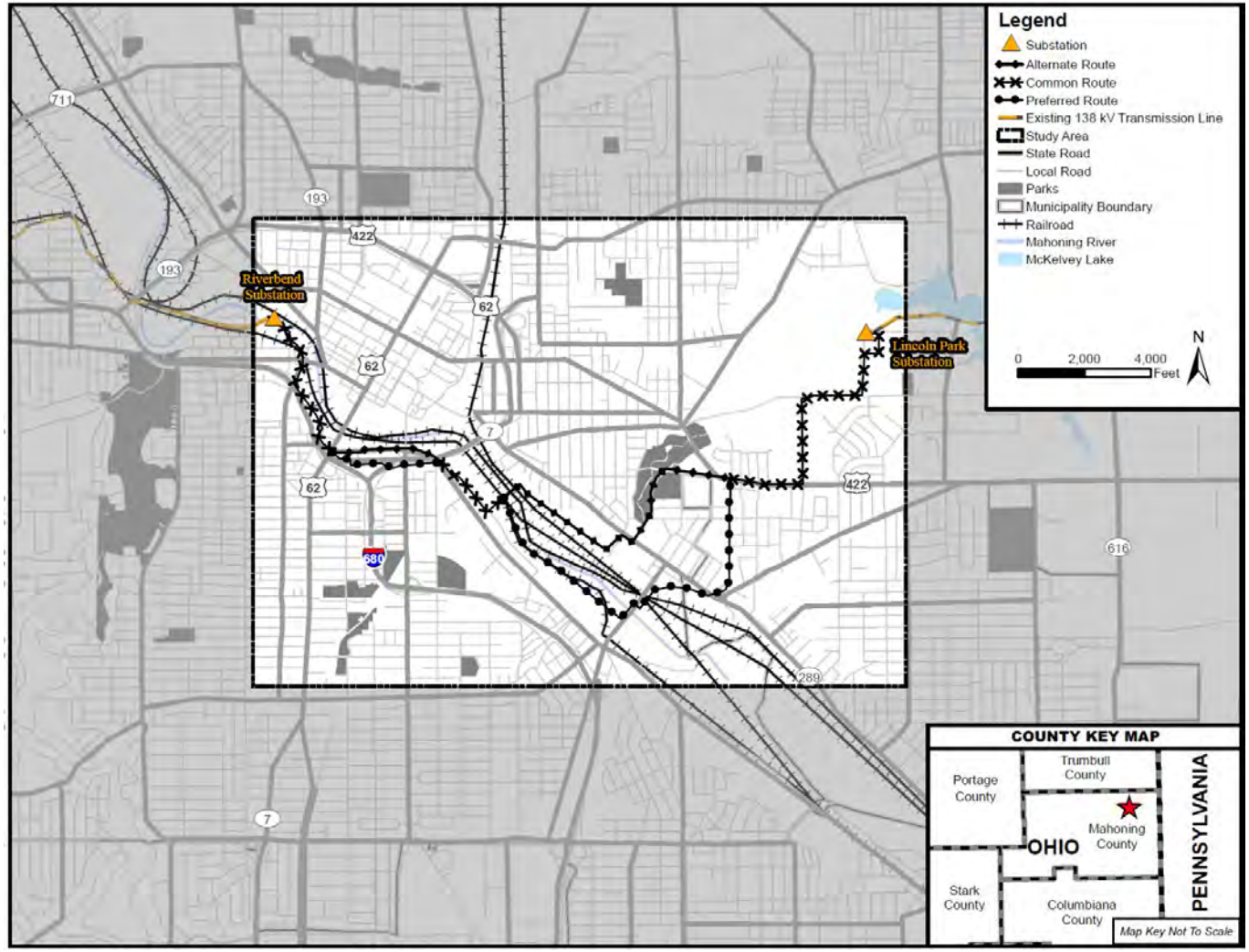
Youngstown 138 kV Reinforcement Project

Public Meeting

June 2025

ENERGIZE 365

Project Overview



ATSI®
American Transmission Systems, Inc.
a subsidiary of FirstEnergy Corp.

- An approximately six-mile, 138 kV transmission line connecting the Lincoln Park and Riverbend substations in Youngstown, Ohio
- Upgrades at both the Lincoln Park and Riverbend substations

Need and Benefits

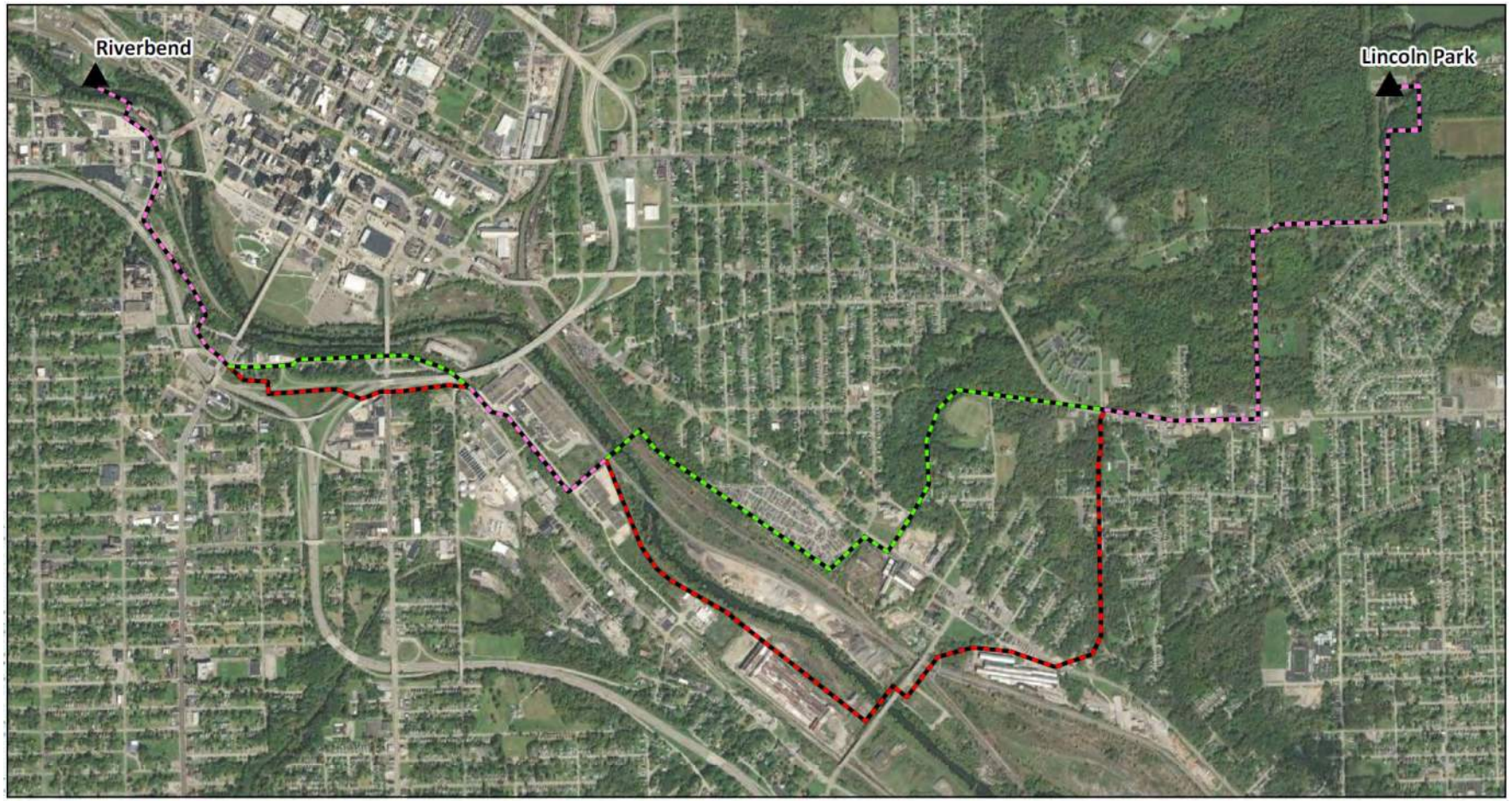
The project's objectives:

- **Provide a 138 kV source between the existing Lincoln Park and Riverbend substations to improve transmission system reliability**
- **Provide additional support for the existing 23 kV distribution network that provides electric service to thousands of residential customers as well as St. Elizabeth Hospital, Youngstown State University and many commercial and industrial facilities in the area**

These improvements will:

- **Reduce impacts on transmission and distribution customers and provide additional capacity for future load growth and economic development in the area as well as alleviate voltage concerns in the Lincoln Park service area, which provides electric service to portions of Ward 1 and Ward 2**

Alternate Routes



Engineering Design Structure Types

Steel Monopoles
Height: 70’-150’











*Typical structures are depicted. More detailed engineering design may require other structure and material types be considered

Real Estate Negotiations

- **Right-of-way width (ROW) required for the transmission line is 65 feet, and in areas where steel poles may be utilized, the ROW needed may expand to 100 feet.**
  - ATSI will negotiate with property owners to obtain any necessary easements or vegetation management rights to support the new transmission line.



- **Examples of land rights acquisition:**
  - Easement agreements
  - Priority tree rights
  - Access roads
- **ATSI's goal is to work with property owners to obtain all necessary rights to construct the Youngstown 138 kV Reinforcement Project. However, should that not occur, ATSI may seek these rights through eminent domain as a last resort.**

Vegetation Management

- **Proper vegetation management is an important part of ensuring electric system reliability.**
- **ATSI focuses on responsible vegetation management to create a sustainable, compatible low-growing habitat that supports reliable electric service.**



Environmental Permitting

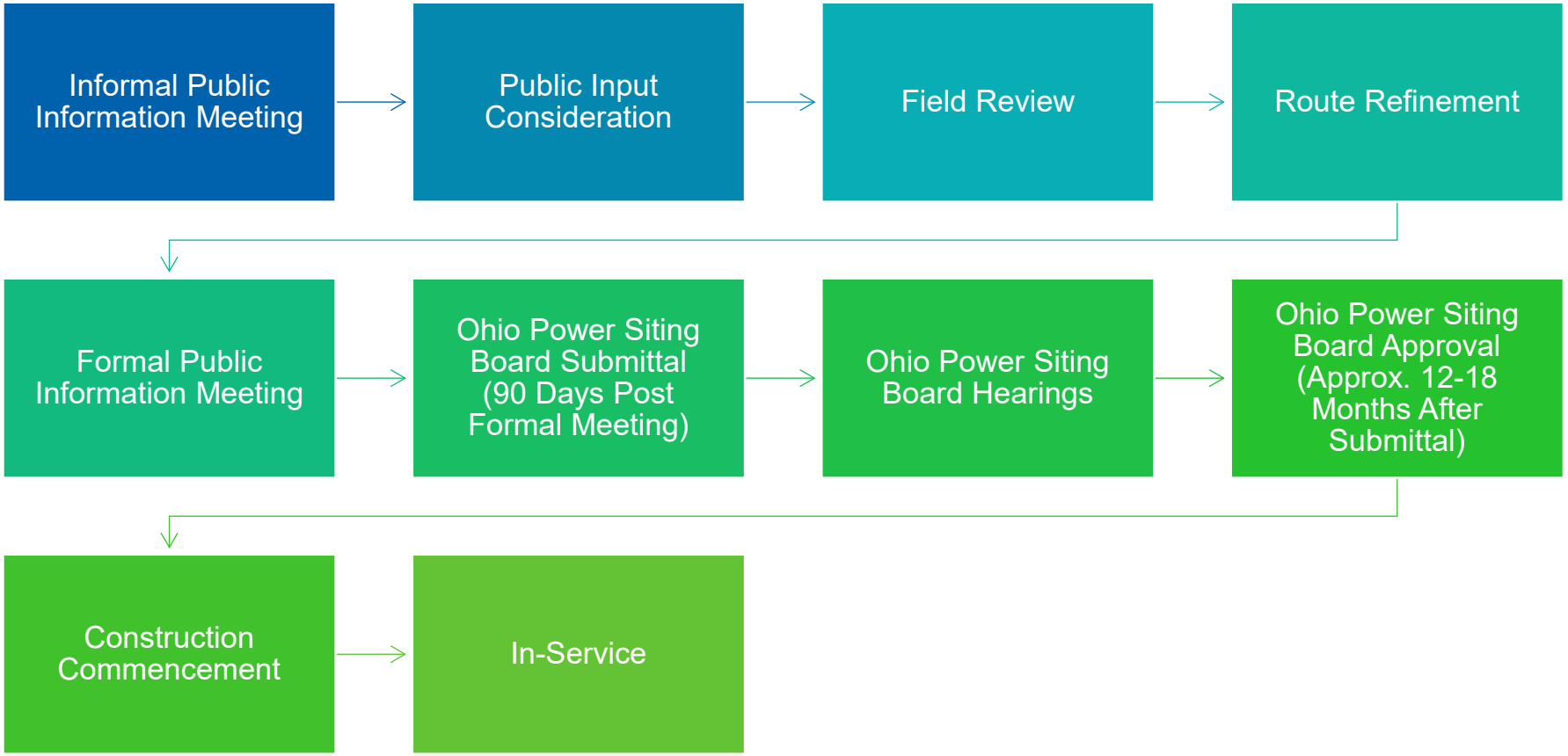
Principal Regulatory Agencies

- U.S. Army Corps of Engineers
- U.S. Fish & Wildlife Service
- Ohio Environmental Protection Agency
- Ohio Department of Natural Resources
- State Cultural Resource Agencies
- County and Municipal Agencies



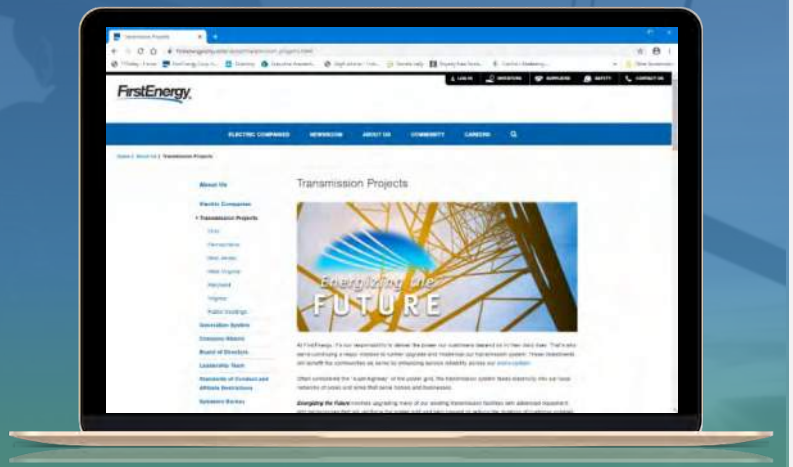


Project Siting Process



ATSI®

American Transmission Systems, Inc.
a subsidiary of FirstEnergy Corp.



Contact Information

- **Visit the project website for additional information**
- **Contact us if you'd like to schedule an individual meeting for further discussion**

Email: transmissionprojects@firstenergycorp.com

Phone: 1-888-311-4737

Websites:
firstenergycorp.com/about/transmission_projects/ohio/youngstown-138-kv-reinforcement-project.html

Virtual Public Meeting Room:
firstenergy.consultation.ai/youngstown138

Interactive Map:
solutions.aecomonline.net/youngstown138



What Are Electric and Magnetic Fields?

Electric and magnetic fields surround anything that generates, transmits, or uses electricity. **Electric fields** result from voltage that pushes electric current through an electrical wire. **Magnetic fields** are produced when electrical current flows through wires and electrical devices. Together, these electric and magnetic fields from electric power sources are commonly referred to as EMF.

Since electricity plays an important role in modern life and in almost everything we do, EMF can be found almost everywhere. The electricity system that is used to transmit and distribute electricity (e.g., transmission lines, distribution lines, and substations) is a source of EMF. When we use electricity in our homes, offices, schools, workplaces, hospitals, and public areas to power the many appliances, devices, and equipment we use for work, leisure, and transportation, EMF also are present.

Are There Guidelines That Limit Exposure to EMF?

There are no federal exposure limits in the United States and no state agency has adopted exposure limits based on a finding that EMF causes adverse health effects. Scientific organizations, however, have recommended exposure guidelines to protect the general public and workers from very high EMF levels, that have the potential to cause nerve and muscle stimulation, which are short-term and reversible effects. EMF levels found in our environment, including those near high-voltage power lines, however, are far too low to cause these effects.



Where Can I Find More Information?

Health Canada

http://healthycanadians.gc.ca/healthy-living-vie-saine/environment-environnement/home-maison/emf-cem-eng.php

National Cancer Institute

http://www.cancer.gov/cancertopics/factsheet/Risk/magnetic-fields

World Health Organization

http://www.who.int/peh-emf/en/

National Institute of Environmental Health Sciences

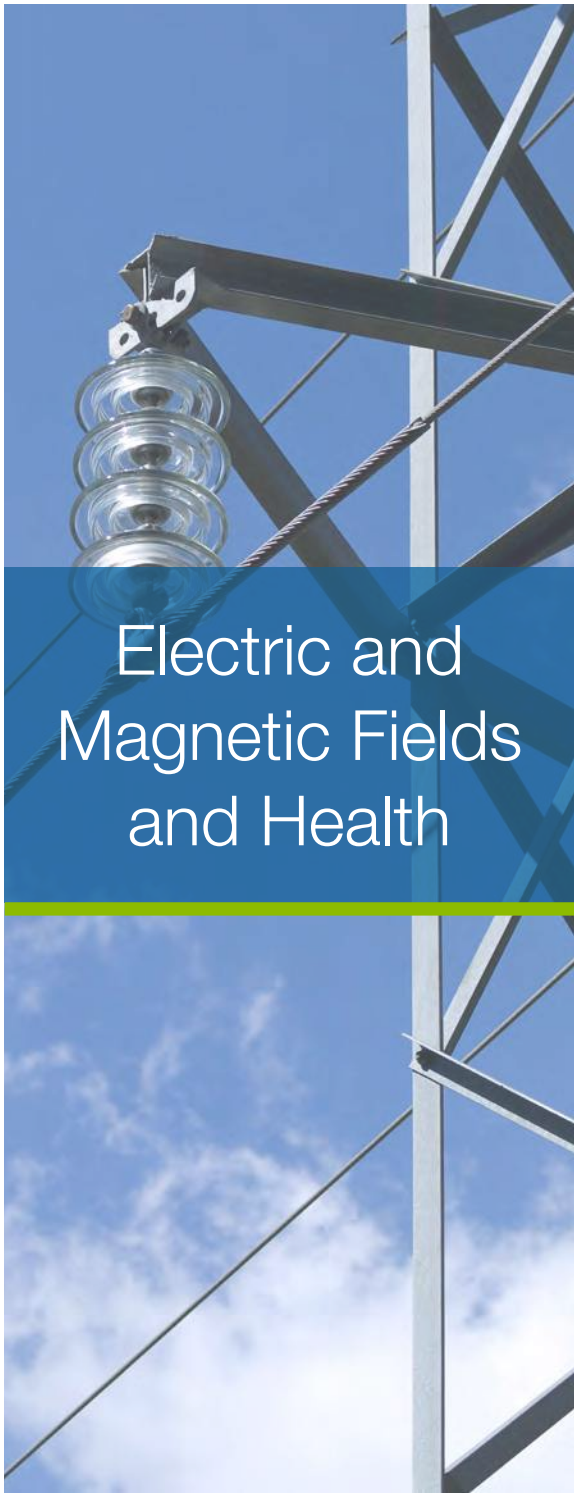
http://www.niehs.nih.gov/health/materials/electric_and_magnetic_fields_associated_with_the_use_of_electric_power_questions_and_answers_english_508.pdf

European Commission – SCENIHR

http://ec.europa.eu/health/scientific_committees/consultations/public_consultations/scenihr_consultation_19_en.htm

Exponent®

Prepared by Exponent for FirstEnergy | January 2016



Electric and Magnetic Fields and Health

How Is EMF Measured and What Are Typical Levels in the Home?

Electric fields are measured in units of volts per meter (V/m) and magnetic fields are measured in milligauss (mG), microtesla (μT) or millitesla (mT) (1 mG = 0.1 μT = 0.0001 mT). The highest levels of EMF are measured directly near the source, and decrease rapidly with distance. Since electric fields are easily blocked or weakened by walls or other objects, more research has been conducted on magnetic fields.

In our homes, magnetic fields are generated from appliances, the wiring that powers those appliances, the distribution lines that deliver electricity to the home, and any currents flowing on water pipes. Magnetic fields from nearby transmission lines also have the potential to contribute to the magnetic-field levels inside a home, but since magnetic fields decrease rapidly as you get farther away from the source, the contribution of transmission lines to a home's magnetic-field level may be less than from other closer sources. The typical average level of magnetic fields in homes in the United States measured away from appliances is approximately 1 mG, while in close proximity to common appliances that are in use, the magnetic-field level can range from tens to hundreds of mG (Table 1).



Table 1. Magnetic Fields Measured from Appliances

Source	Distance from Source*		
	6 inches (mG)	1 foot (mG)	2 feet (mG)
Can Opener	600	150	20
Vacuum Cleaner	300	60	10
Hair Dryer	300	1	–
Portable Heater	100	20	4
Electric Range	30	8	2
Dishwasher	20	10	4
Toaster	10	3	–
Coffee Maker	7	–	–

Source: EMF Questions and Answers (NIEHS, 2002)

* The numbers represent the median magnetic field (i.e., half of the appliances tested had higher levels and half had lower levels than those shown in the figure).

Equipment within substations also produces magnetic fields, but here too, the fields drop off quickly with distance. At the boundary of substation sites, the magnetic field from substation equipment is typically within the range of levels found inside our homes. The dominant source of magnetic fields near substation boundaries is the power lines serving the substation.



How Are Potential Health Effects Studied?

There are three main approaches that scientists use to study potential effects of exposure to any physical, chemical, or biological agent, including EMF. Over the past 35 years, thousands of studies have been published in research areas related to EMF.

Epidemiologic studies are conducted among people to observe if persons with a disease (such as cancer) experienced higher exposures to EMF than persons without that disease.

Laboratory animal studies (also called *in vivo* studies) are conducted in laboratory animals, most commonly mice and rats, to test whether extended exposures to high levels of EMF cause increased rates of disease or toxic effects.

Laboratory studies of cells and tissues (also called *in vitro* studies) are conducted to see if exposure to EMF can cause any changes in biological processes that could lead to disease.

How Are Scientific Conclusions Drawn from Health Studies?

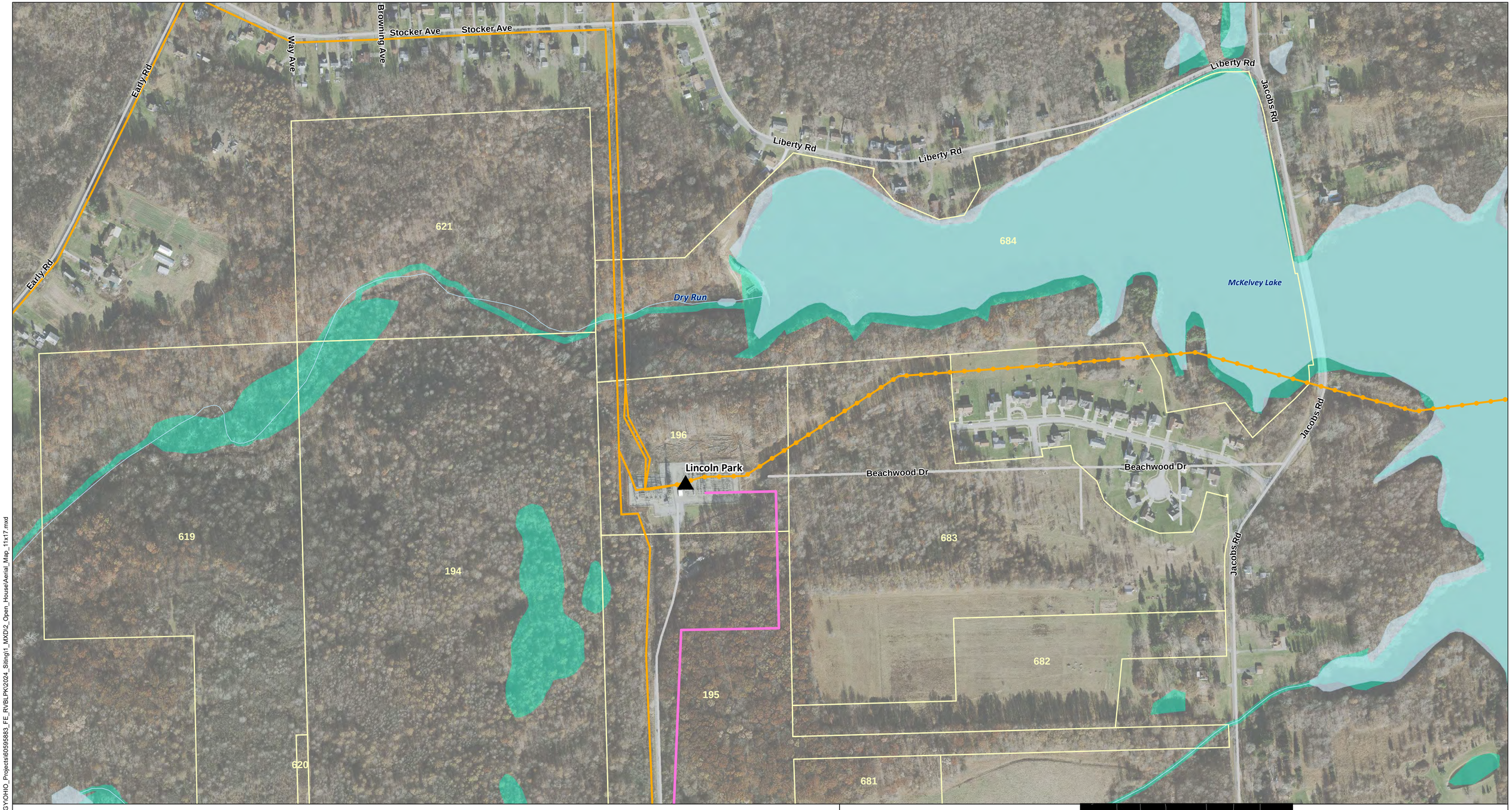
First and foremost, no single study or a selected small group of studies can form the sole basis of a valid scientific assessment. The method that scientists use to conduct health risk assessments involves the evaluation of all relevant studies in the three main research areas discussed above. The three areas have varying strengths and limitations, thus, they contribute different information to a scientific evaluation and have to be weighed together. Because epidemiologic studies are conducted among people, the main interest of health research, they provide highly relevant scientific evidence. *In vivo* studies can be well controlled by the investigators and can expose animals to high levels of exposure for long time periods up to the entire lifetime of the animals. While animal studies require extrapolation between species, these tests form the primary basis for assessing the safety of all drugs and medicines. *In vitro* laboratory studies may contribute to better scientific understanding of biological processes and potential exposure effects on a cellular level; however, because cells and tissues may not react the same way in experimental settings as in intact organisms, no direct conclusions can be drawn from *in vitro* studies about disease and adverse health effects. In the overall evaluation, scientists look for overall patterns within and across the three research areas. Epidemiology and *in vivo* studies have primary importance, while *in vitro* studies contribute secondary information in the assessment of scientific evidence. Studies also vary greatly in their quality, thus, each study contributes different weight in the overall evaluation. Higher quality studies contribute more weight, while lower quality studies contribute less weight, and studies with very poor methods may not contribute at all.



What Have Authoritative Scientific Organizations Concluded?

Numerous scientific organizations have assembled groups of independent scientists with expertise in a variety of disciplines to perform comprehensive reviews of EMF research. These organizations include the International Agency for Research on Cancer, the International Commission on Non-Ionizing Radiation, the National Institute of Environmental Health Sciences, the World Health Organization, and most recently in 2015, a Scientific Committee of the European Commission. Overall, the conclusions of these panels are consistent and can be summarized generally, as follows:

- The research does not support the conclusion that EMF causes any long-term, adverse health effects.
- Some epidemiologic studies have reported a statistical association between high, average magnetic-field levels and childhood leukemia. No authoritative agency has concluded, however, that magnetic fields cause childhood leukemia due to the limitations of these studies and the lack of evidence from laboratory studies.
- The *in vivo* studies, overall, do not report an increase in cancer among animals exposed to high levels of EMF even after lifetime exposures.
- The *in vitro* studies provide no explanation as to how magnetic fields could cause disease.



Existing Substation
Existing Transmission Line (69 kV or lower)
Existing Transmission Line (138 kV)
Common Route
Stream
Waterbody
NWI Wetland
Parcel Boundary

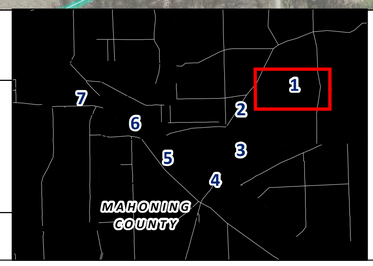
Transmission line routes are preliminary and subject to change

1 inch = 200 feet
when printed at 22x34

0 200 400 600
Feet

Imagery Source: NAIP, 2016

February 18, 2025



Aerial Map 1 of 7

ATSI
Youngstown 138 kV
Reinforcement Project

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- Existing Transmission Line (69 kV or lower)
- Common Route
- Stream
- Waterbody
- NWI Wetland
- Parcel Boundary
- School
- Church

ATSI

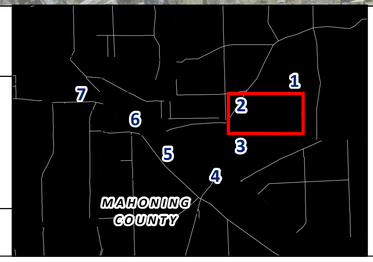
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Feet

Imagery Source: NAIP, 2016

February 18, 2025



Aerial Map 2 of 7

ATSI
Youngstown 138 kV
Reinforcement Project

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Existing Transmission Line (69 kV or lower)
Alternate Route
Common Route
Preferred Route
Stream
Waterbody
NWI Wetland
Parcel Boundary
Church

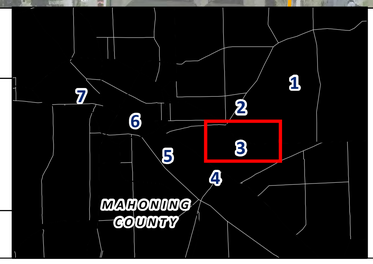
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0 200 400 600
Feet

Imagery Source: NAIP, 2016

February 18, 2025



Aerial Map 3 of 7

ATSI
Youngstown 138 kV
Reinforcement Project

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Existing Transmission Line (69 kV or lower)

Alternate Route

Preferred Route

Stream

NWI Wetland

Parcel Boundary

Church

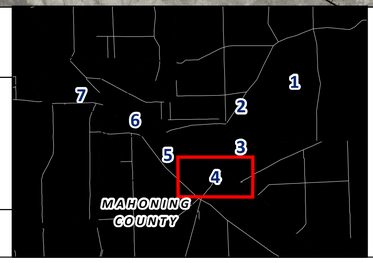
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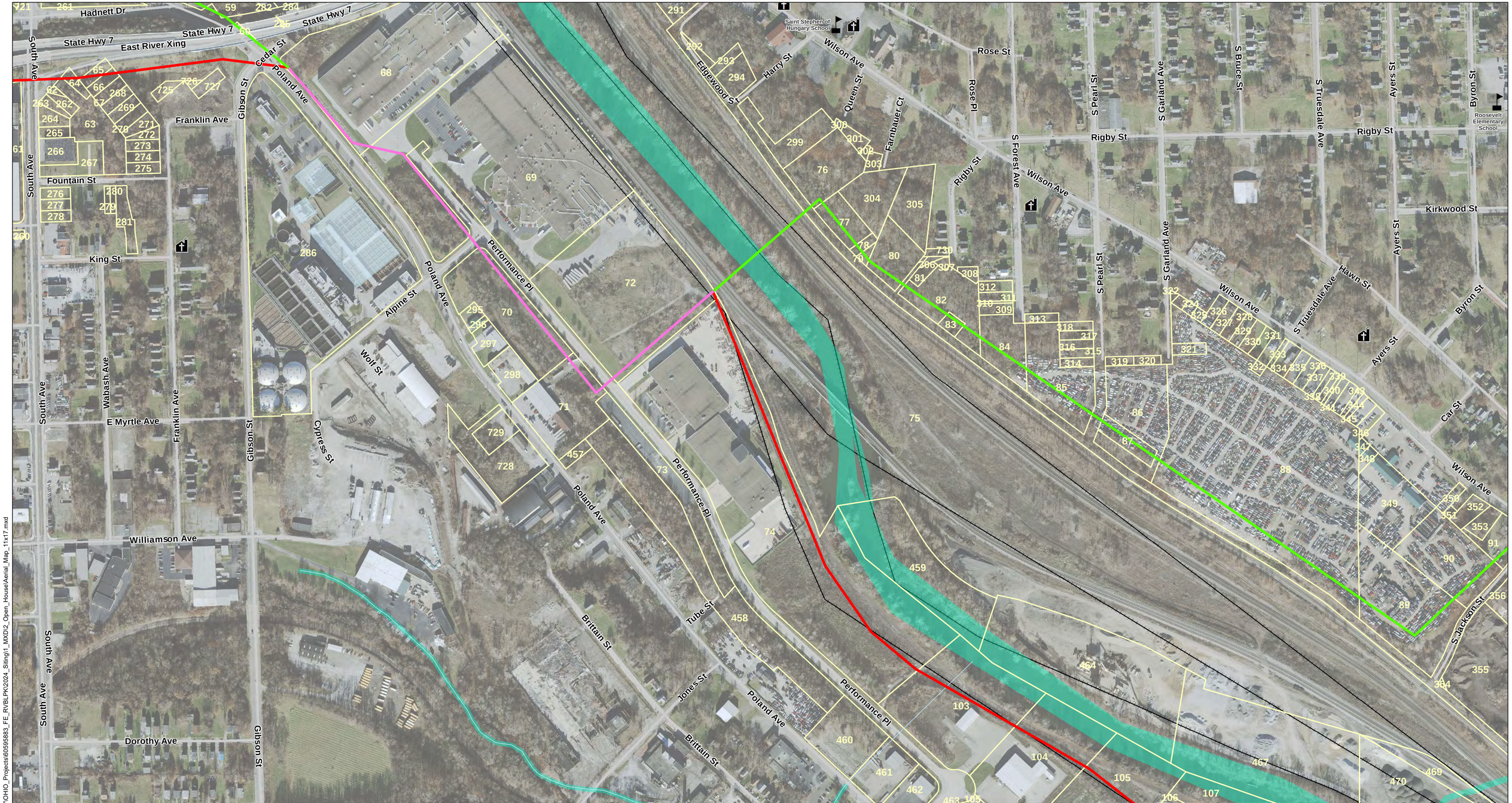
February 18, 2025



Aerial Map 4 of 7

ATSI
Youngstown 138 kV
Reinforcement Project

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Alternate Route
Common Route
Preferred Route
Stream
Waterbody
NWI Wetland
Parcel Boundary
School
Church

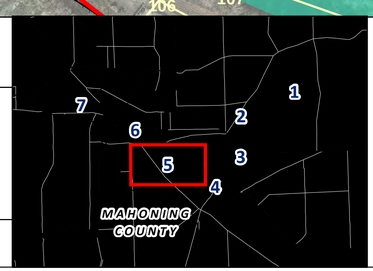
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Feet

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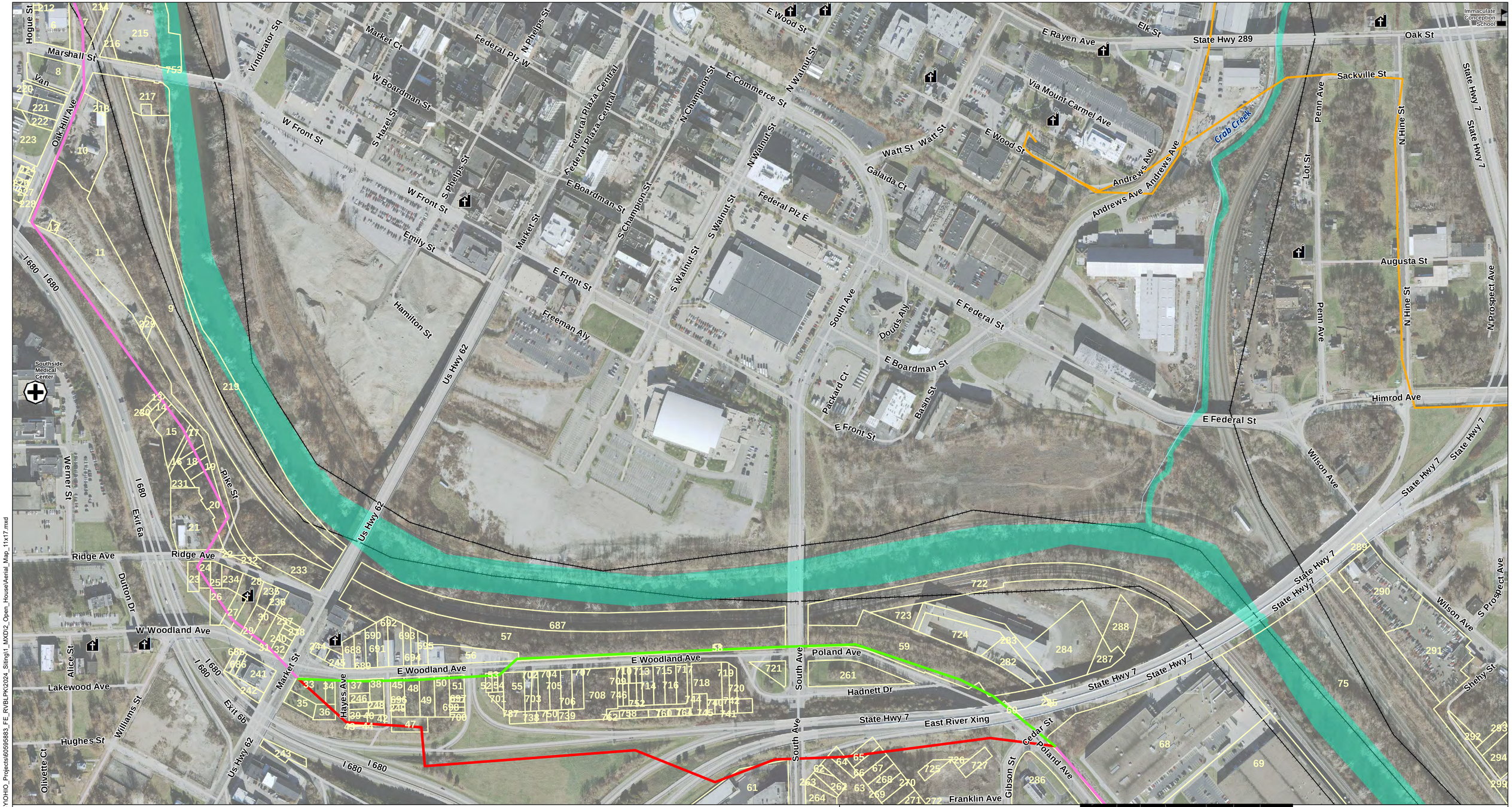
February 18, 2025



Aerial Map 5 of 7

ATSI
Youngstown 138 kV
Reinforcement Project

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- Existing Transmission Line (69 kV or lower)
- Alternate Route
- Common Route
- Preferred Route
- Stream
- NWI Wetland
- Parcel Boundary
- School
- Church
- Hospital

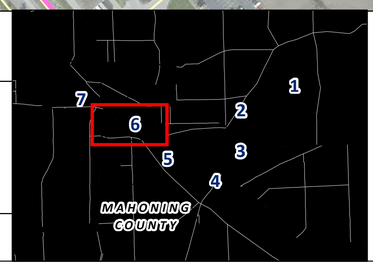
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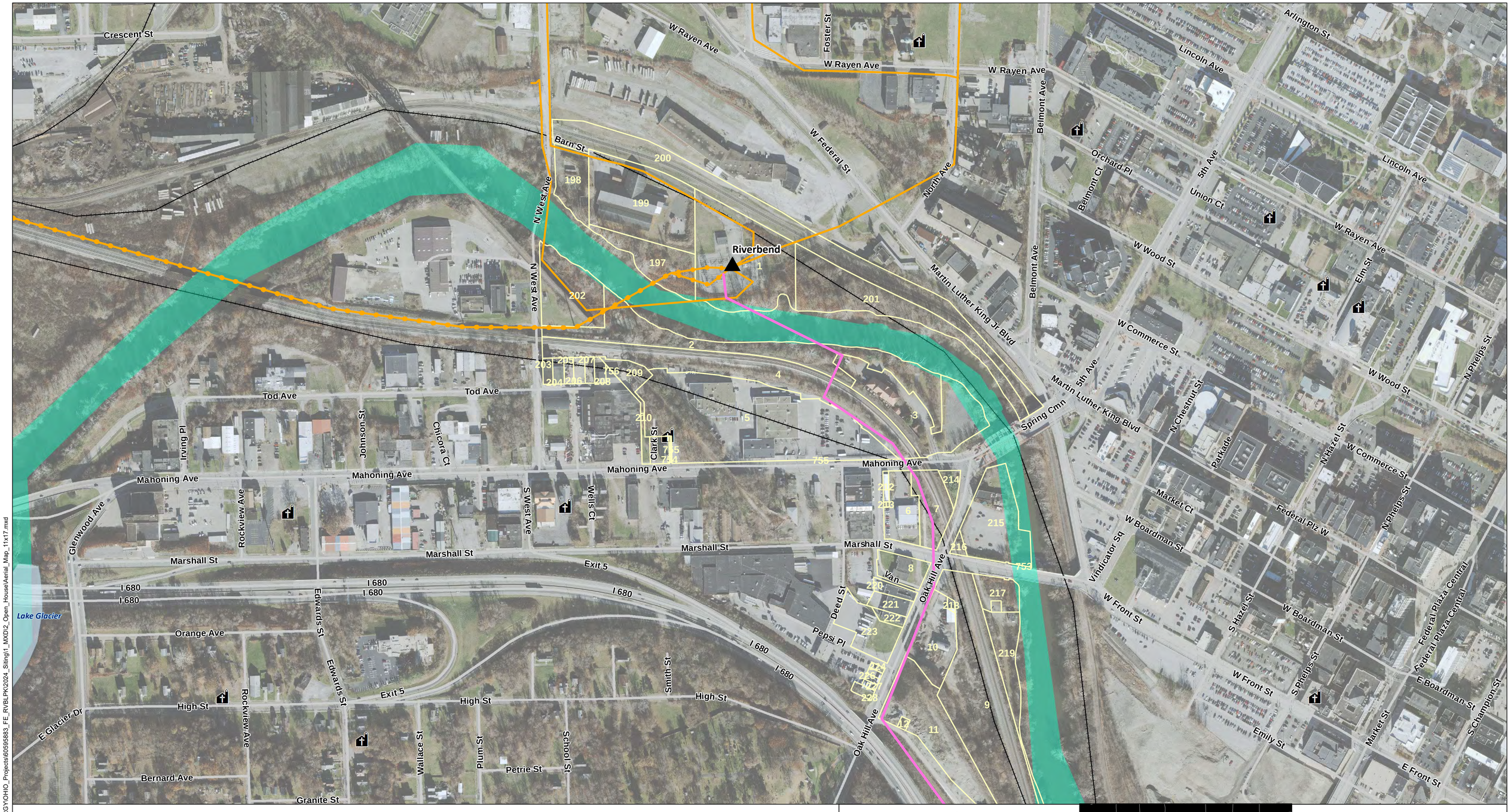
February 18, 2025



Aerial Map 6 of 7

ATSI
Youngstown 138 kV
Reinforcement Project

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- Existing Substation
- Existing Transmission Line (69 kV or lower)
- Existing Transmission Line (138 kV)
- Common Route
- Waterbody
- NWI Wetland
- Parcel Boundary
- Church

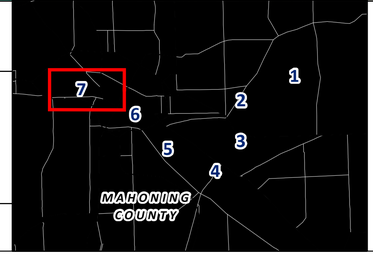
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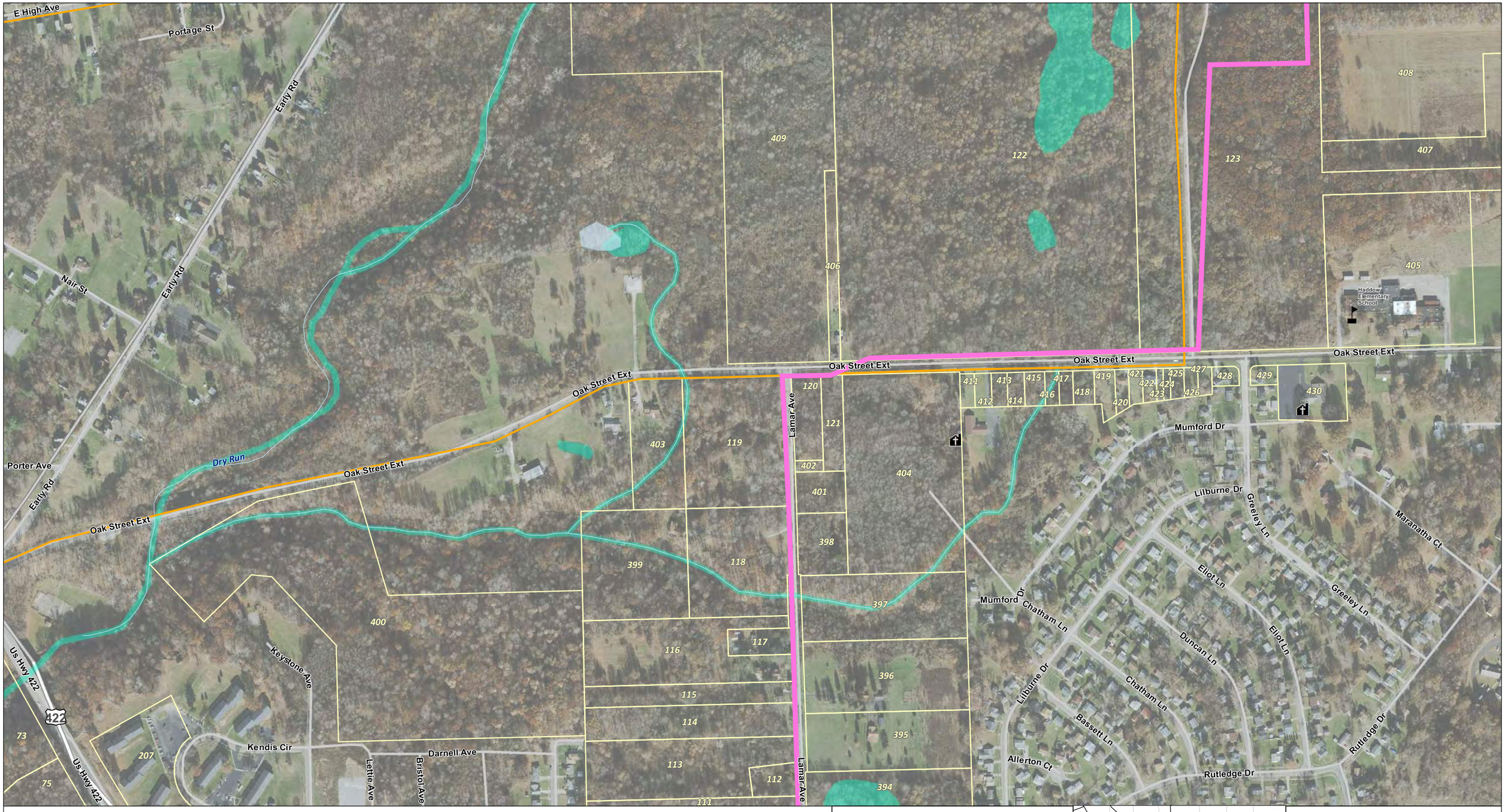
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Aerial Map 7 of 7

ATSI
Youngstown 138 kV
Reinforcement Project

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Common Route Option
Existing Transmission Line (69 kV or lower)
Stream
Waterbody
NWI Wetland
Parcel Boundary
School

ATSI

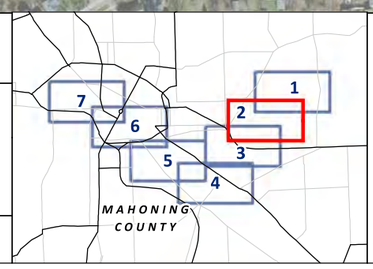
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Feet

Imagery Source: NAIP, 2016

May 28, 2024



Aerial Map 2 of 7

ATSI
Youngstown 138 kV
Reinforcement Project

Common Route Option
Alternative Option C
Alternative Option D
Existing Transmission Line (69 kV or lower)
Stream
Waterbody
NWI Wetland
Parcel Boundary

ATSI

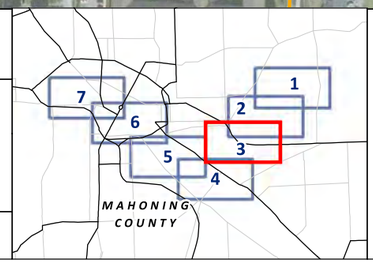
Transmission line routes are preliminary and subject to change

1 inch = 200 feet
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0 200 400 600
Feet

Imagery Source: NAIP, 2016

May 28, 2024



Aerial Map 3 of 7

ATSI
Youngstown 138 kV
Reinforcement Project

Alternative Option C
Alternative Option D
Existing Transmission Line (69 kV or lower)
Stream
NWI Wetland
Parcel Boundary

ATSI

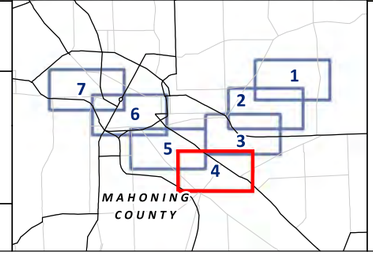
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Feet

Imagery Source: NAIP, 2016

May 28, 2024



Aerial Map 4 of 7

ATSI
Youngstown 138 kV
Reinforcement Project



- Common Route Option
- Alternative Option A
- Alternative Option B
- Alternative Option C
- Alternative Option D
- Stream
- Waterbody
- NWI Wetland
- Parcel Boundary
- School

ATSI

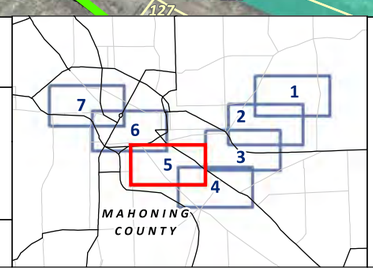
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Feet

Imagery Source: NAIP, 2016

May 28, 2024



Aerial Map 5 of 7

ATSI
Youngstown 138 kV
Reinforcement Project

- Common Route Option
- Alternative Option A
- Alternative Option B
- Existing Transmission Line (69 kV or lower)
- Stream
- NWI Wetland
- Parcel Boundary
- School

ATSI

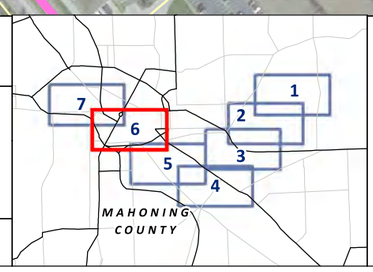
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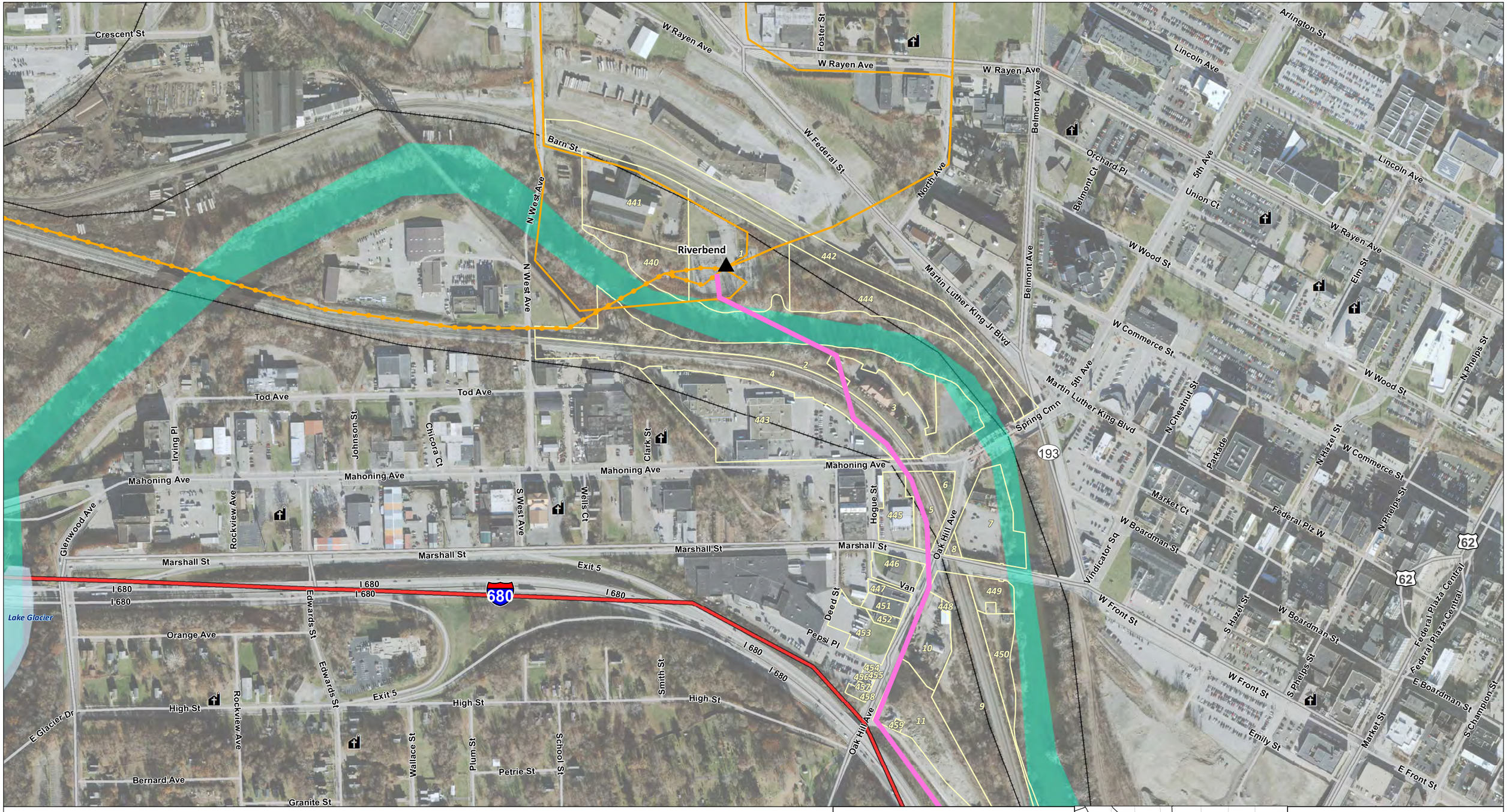
Imagery Source: NAIP, 2016

May 28, 2024



Aerial Map 6 of 7

ATSI
Youngstown 138 kV
Reinforcement Project



- Existing Substation
- Common Route Option
- Existing Transmission Line (69 kV or lower)
- Existing Transmission Line (138 kV)
- Waterbody
- NWI Wetland
- Parcel Boundary

ATSI

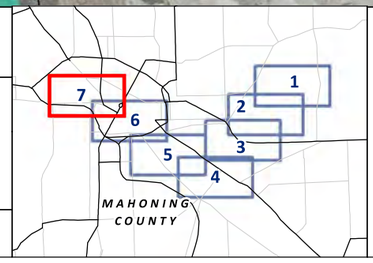
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Feet

Imagery Source: NAIP, 2016

May 28, 2024



Aerial Map 7 of 7

ATSI
Youngstown 138 kV
Reinforcement Project

4906-4-07 AIR, WATER, SOLID WASTE AND AVIATION COMPLIANCE

(B) Air Quality Regulation Compliance

This requirement is inapplicable because the Project does not include the installation of any air pollution source.

(C) Water Quality Regulation Compliance

(C)(1)(a): ATSI will submit a Notice of Intent for coverage under the Ohio Environmental Protection Agency (OEPA) General National Pollutant Discharge Elimination System (NPDES) Permit for Construction Activities. As the Proposed Route crosses a Section 10 River, the Mahoning River, a Section 10 authorization with the U.S. Army Corps of Engineers (USACE) will be required provided by a Pre-Construction Notification (PCN) under the Nationwide Permit 57 conditions. Additional permitting may be necessary regardless of route due to encroachment of jurisdictional wetlands or waterbodies that will be jointly covered under the submittal of the PCN application for this Project.

(C)(1)(b)-(e): This requirement is inapplicable because the Project will not require aquatic discharges and no water or water-borne wastes will flow through the facility.

(C)(2)(a)-(e): This requirement is inapplicable because the Project will not require aquatic discharges and no water or water-borne wastes will flow through the facility. ATSI intends to adhere to OEPA NPDES Permit for Construction Activities and develop a Stormwater Prevention Pollution Plan (SWPPP) in accordance with the local jurisdictions of the Project area. The SWPPP will include installation of temporary sediment barriers including filter socks, silt fence, and other construction sequences to reduce and eliminate opportunities of off-site runoff during construction activities. See Section 4906-4-07(E)(7) for further information regarding stormwater and erosion control practices.

(C)(3)(a)-(e): This requirement is inapplicable because the Project will not require aquatic discharges, and no water or water-borne wastes will flow through the facility. Following the construction of the Project, disturbed areas will be stabilized and seed with mulch to allow natural vegetation to recover. Due to the temporary nature of the construction (access and work areas) and minimal number of impervious areas from foundations or structures, post construction stormwater management devices are not necessary to be installed for the Project. After restoration is completed from the temporary disturbed areas, no operation maintenance of stormwater or water quality devices will be necessary for the Project. See Section 4906-4-07(E)(7) for further information regarding stormwater and erosion control practices.

(D) Solid Waste Regulations Compliance

(D)(1)(a)-(b): There is no solid waste generated as part of preconstruction of this Project.

(D)(2)(a): It is estimated that approximately 400 cubic yards of construction debris could be generated from the Project.

(D)(2)(b): As construction proceeds, the ROW will be kept clean of all rubbish and debris. Debris associated with construction of the proposed transmission line is expected to consist of conductor scrap, construction material packaging including cartons, insulator crates, conductor reels and wrapping, and used stormwater erosion control materials. Clearance poles, conductor reels and other materials with salvage value will be removed from the construction area for reuse or salvage. Construction debris will be disposed of in accordance with state and federal requirements in an OEPA-approved landfill or other appropriately licensed and operated facility.

(D)(3)(a)-(b): This requirement is inapplicable because the Project will not generate any solid waste during operation.

(D)(4): No waste permits will be necessary for the Project.

(E) Aviation Regulation Compliance

(E)(1): The height of the tallest anticipated aboveground structure and construction equipment is expected to be approximately 150 feet.

(E)(2): The nearest airport is located in Mahoning County, a private airport, approximately 2.2 miles north of the proposed transmission line. Two helipads associated with hospitals are located within one mile north of the project near downtown Youngstown.

(E)(3): Based on preliminary engineering, ATSI submitted the proposed structure locations and heights to the Federal Aviation Administration (FAA) Notice Criteria Tool for Obstruction Evaluation/Airport Airspace Analysis. The FAA Notice Criteria Tool made a determination that no structures exceed the notice criteria, therefore, no structures require filing with the FAA. The results of the FAA Notice Criteria Tool can be found in **Appendix 7-1**. Upon completion of the final design, ATSI will review the need for any permitting with the FAA and will follow recommendations made by the FAA.

(E)(4): The Project will not have any 14 Code of Federal Regulations (CFR) part 77 impacts.

(E)(5): A summary of anticipated permits and authorizations for the Project is provided in the Table 7-1, below. There are no other known local, state, or federal requirements that must be met prior to commencement of the Project.

Table 7-1

Anticipated Permits

Permit/Authorization/Coordination	Agency	Date
Storm Water Pollution Prevention Plan	Ohio Environmental Protection Agency	NPDES Notice of Intent and SWPPP application to City/County will be filed prior to construction.
	City of Youngstown and Mahoning County	

Table 7-1

Anticipated Permits

Permit/Authorization/Coordination	Agency	Date
Notice Criteria	Federal Aviation Administration	June 2025 - No structures require filing with the FAA.
Road Use Maintenance Agreement	Local Jurisdictions	To be filed prior to construction activities
Clean Water Act Section 404/401	United States Army Corps of Engineers	To be filed prior to construction activities (if warranted).
	Ohio Environmental Protection Agency	
Archaeology/Architectural	Ohio Historic Preservation Office	"No effect" determination of Proposed route obtained on June 6 and 10, 2025. See **Appendix 8-6**.
Threatened and Endangered Species	United States Fish and Wildlife Service	Received, **Appendix 8-4**
Threatened and Endangered Species	Ohio Department of Natural Resources	Received, **Appendix 8-1**
Highway Crossing	Ohio Department of Transportation	Initial confirmation of I-90: See **Appendix 7-2** ROW/Occupancy Permits and Aerial Crossings to be obtained prior to construction.
Section 10 River Crossing	United States Army Corps of Engineers	To be filed prior to construction of the Project
Floodplain	City of Youngstown	Exempt From Floodplain Development Permit under City of Youngstown Code 1305.19. Letter of intent to be filed with City of Youngstown prior to construction.

(E)(6): As discussed in Section 4906-4-07(D)(2)(a) and (b), there could be approximately 400 cubic yards of construction debris as a result of construction for this Project. Construction debris will be disposed of in accordance with state and federal requirements in an OEPA-approved landfill or other appropriately licensed and operated facility.

(E)(7): A SWPPP will be prepared, best management practices (BMPs) will be implemented to minimize soil erosion and sedimentation and other pollutant discharges and will be made available onsite during Project construction. The SWPPP will include the following general provisions, at a minimum:

Erosion and Sediment Controls

Implementation of erosion and sediment control practices will be based on the methods and standards described in the Ohio Department of Natural Resources (ODNR) Rainwater and Land Development Manual (ODNR, 2014)[1] and the OEPA NPDES Permit Program for the discharge of stormwater from construction sites.

Wetlands, streams, and other environmentally sensitive areas will be clearly marked before the start of clearing or construction. No construction or access will be permitted in these areas unless clearly specified in the SWPPP.

No impacts to streams or headwaters are anticipated. No poles are anticipated to be located in streams and no permanent stream crossings are anticipated. Streams, including beds and banks, if disturbed during construction, will be re-stabilized immediately after in-channel work is completed.

Although grubbing activities are not anticipated, sediment basins, traps, and perimeter sediment controls will be implemented within 7 days of any potential grubbing activities. Sediment controls will continue to function until disturbed areas are permanently stabilized.

Silt Fence: Silt fencing or other appropriate BMPs (as used below, "silt fence" includes silt fencing and/or other equivalent BMPs) for erosion control will be installed as needed before ground-disturbing work begins. Silt fence will be installed according to the methods recommended in the Rainwater and Land Development Manual (ODNR, 2014)[1] before upslope land disturbance begins. In general, silt fence will be used where there is the possibility that sheet flow will carry sediment-laden water into downstream creeks or wetlands. Other methods will be used where flow in ditches, channels or gullies is anticipated. The following installation guidelines will be followed:

- Silt fence will be constructed before upslope land disturbance begins.
- All silt fences will be placed as close to the contour as possible so that water will not concentrate at low points in the fence and so that small swales or depressions that may carry small, concentrated flows to the silt fence are dissipated along its length.

[1] ODNR. 2014. Rainwater and Land Development.
Division of Water Resources. Available online at
https://dam.assets.ohio.gov/image/upload/epa.ohio.gov/Portals/35/storm/technical_assistance/Intro_11-6-14-1.pdf Accessed July 24, 2021

- Ends of the silt fences will be brought upslope slightly so that water ponded by the silt fence will be prevented from flowing around the ends.
- Silt fences will be placed on the flattest area available.
- Where possible, vegetation will be preserved for 5 feet (or as much as possible) upslope from the silt fence. If vegetation is removed, it will be reestablished within 7 days from the installation of the silt fence.
- The height of the silt fence will be a minimum of 16 inches above the original ground surface.
- The silt fence will be placed in an excavated or sliced trench cut a minimum of 6 inches deep. The trench will be made with a trencher, cable laying machine, slicing machine, or other suitable device that will ensure an adequately uniform trench depth.
- The silt fence will be placed with the stakes on the downslope side of the geotextile. A minimum of 8 inches of geotextile will be below the ground surface. Excess material will lay on the bottom of the 6-inch deep trench. The trench will be backfilled and compacted on both sides of the fabric.
- Seams between sections of silt fence will be spliced together only at a support post with a minimum 6-inch overlap prior to driving into the ground.

Soil Stabilization: Disturbed areas that remain unworked for more than 21 days will be stabilized with seed and mulch no later than 14 days after the last construction in that area.

Maintenance and Inspection: Erosion and sediment control practices will be inspected at least once every 7 days and within 24 hours after any storm event greater than 0.5 inches of rain per 24-hour period.

ATSI will maintain erosion control measures in good working order. If a repair is necessary, it will be initiated within 24 hours of report. Silt fencing will be inspected for depth of sediment, for tears, for assurance fabric is securely attached to the fence posts, and to ensure that the fence posts are firmly in the ground. Seeded areas will be inspected for evidence of bare spots or washouts. Permanent records of the maintenance and inspection must be maintained throughout the construction period. Records will include, at a minimum, the name of the inspector, major observations, date of inspection, certification of compliance, and corrective measures taken.

(E)(8): All materials stored onsite will be kept in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure. Products will be kept in their original containers with the original manufacturer's label. Manufacturer's recommendations for proper use and disposal will be followed. Material Safety Data Sheets (MSDS) or Safety Data Sheets (SDS) will be retained and available onsite at all times.

The following general provisions will also be included in the SWPPP to address disposition of contaminated soil and hazardous materials generated or encountered during construction:

Spill Prevention

The following spill prevention methods and procedures are proposed:

- All onsite vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers, which are clearly labeled.
- Secondary containment will be provided for all onsite fuel storage tanks required during construction.
- All sanitary waste will be collected in portable units and emptied regularly by a licensed sanitary waste management contractor, as required by local regulations.
- All spills will be cleaned up immediately after discovery. Manufacturer's recommended methods for spill cleanup will be followed. Materials and equipment necessary for spill cleanup will be kept in a designated storage area onsite.
- Spills will be reported to the appropriate government agency as required.
- Suspected hazardous materials encountered during construction will be reported to the regional environmental coordinator by the transmission construction representative. In addition, the Project manager will be notified.

(E)(9):

Dust Control

The site and surrounding areas will be kept free from dust nuisance resulting from site activities. During excessively dry periods of active construction, dust suppression will be implemented where necessary through irrigation, mulching, or application of tackifier resins.

Excessive Muddy Soil Conditions

Construction entrances will be established and maintained to a condition that will prevent tracking or flowing of sediment onto public ROW. Accumulated sediment spilled, dropped, washed, or tracked onto public ROWs will be removed as soon as practical.

Memorandum

Date: 04/02/2025

To: Hailey Solomon

From: Burns & McDonnell FAA Review Team

Subject: FAA Notice Criteria Check for Lincoln Park - Riverbend 138kV

By submitting this request, you agreed for the Project and Task number listed below to be billed in full for the amount indicated in the Notice Criteria Fee Estimator tab of the FAA Notice Check Form of **$1040**. Invoicing will now be processed to the Project and Task 149673-1TND-KCM.1.30.10 as an equipment rental charge by ENS and any labor nominal labor fees associated with billing.

Project Number: 149673
Task Number for Labor: 1TND-KCM.1.30.10 - PROJECT MGMT-ADMIN
Task Number for Expenses: 1TND-KCM.1.30.10 - PROJECT MGMT-ADMIN
Project Name: Lincoln Park - Riverbend 138kV
Project Location: This project is located in northeast Ohio and will span through urban, industrial, and suburban areas. Terrain is relatively flat
Nearest City: Youngstown
Project State: Ohio
Project Description: Devleop a new 138kV Transmission Line connecting Lincoln Park Substation to Riverbend Substation, approximately 6.2 miles

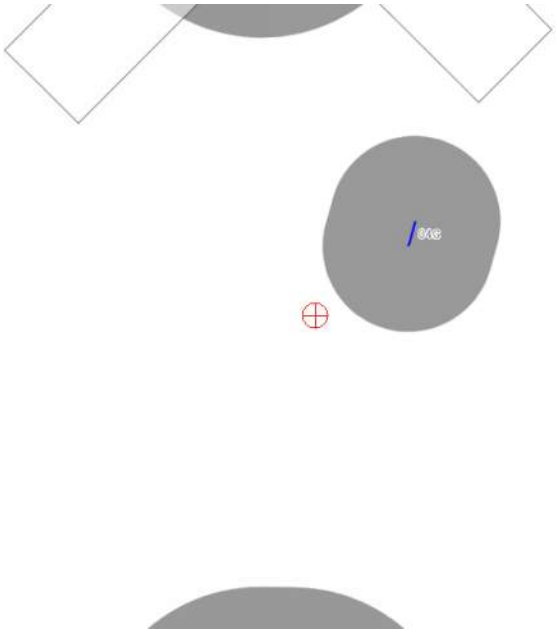
Results:
There were 104 structures studied (Structure types included: POWER_LINE | Transmission Line Tower) utilizing the FAA Notice Criteria Tool (https://oeaaa.faa.gov/oeaaa/external/gisTools/gisAction.jsp?action=showNoNoticeRequiredToolForm) and below is the resulting analysis.

No structures require filing with the FAA.

Structure: 149673_1
Latitude: 41-6-14.14 N
Longitude: 80-39-38.74 W
Elevation: 840 feet
Structure Height: 121 feet

Study Type: Catenary

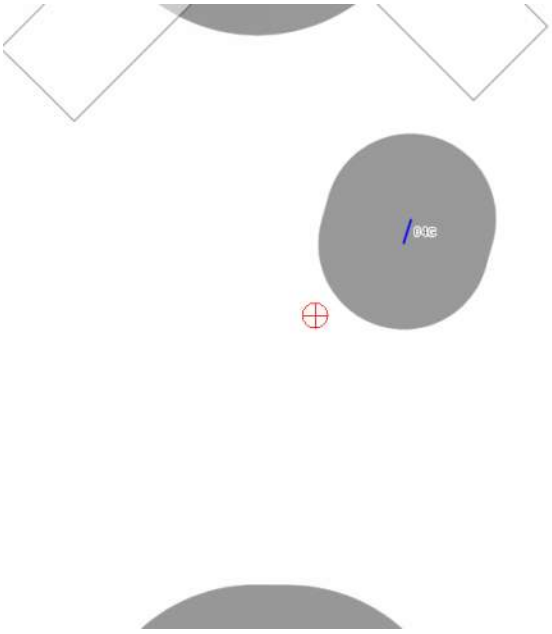
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_2
Latitude: 41-6-11.51 N
Longitude: 80-39-32.1 W
Elevation: 844 feet
Structure Height: 121 feet

Study Type: Catenary

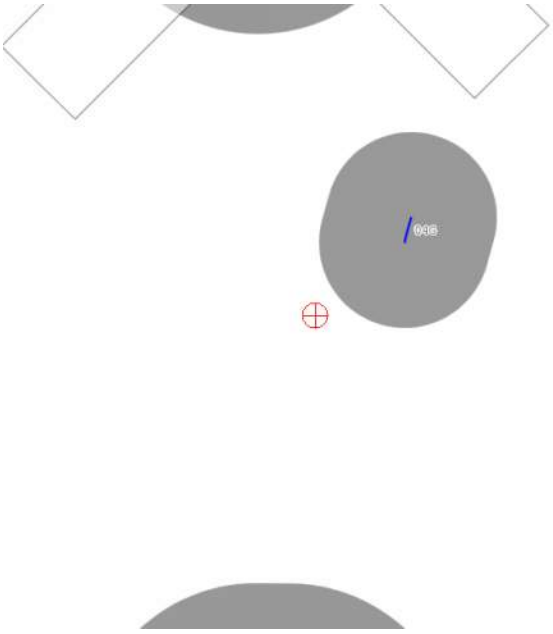
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_3
Latitude: 41-6-9.71 N
Longitude: 80-39-33.23 W
Elevation: 843 feet
Structure Height: 116 feet

Study Type: Catenary

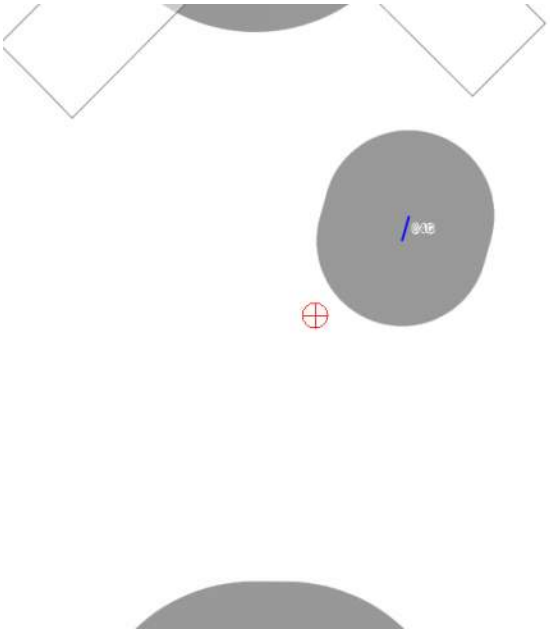
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_4
Latitude: 41-6-7.62 N
Longitude: 80-39-29.32 W
Elevation: 848 feet
Structure Height: 111 feet

Study Type: Catenary

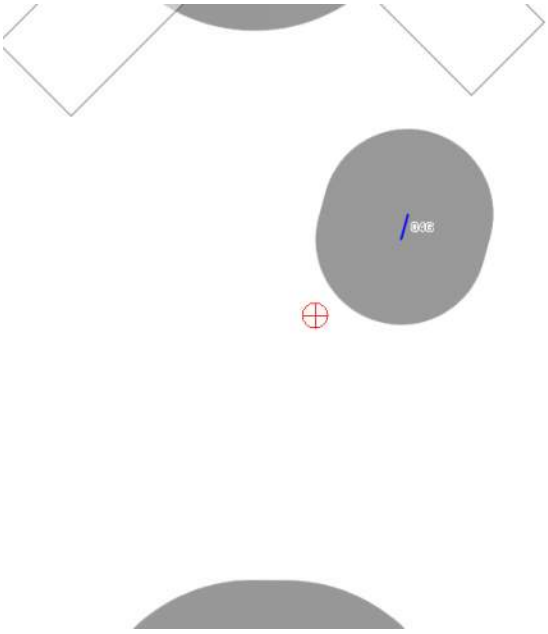
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_5
Latitude: 41-6-6.04 N
Longitude: 80-39-27.94 W
Elevation: 848 feet
Structure Height: 106 feet

Study Type: Catenary

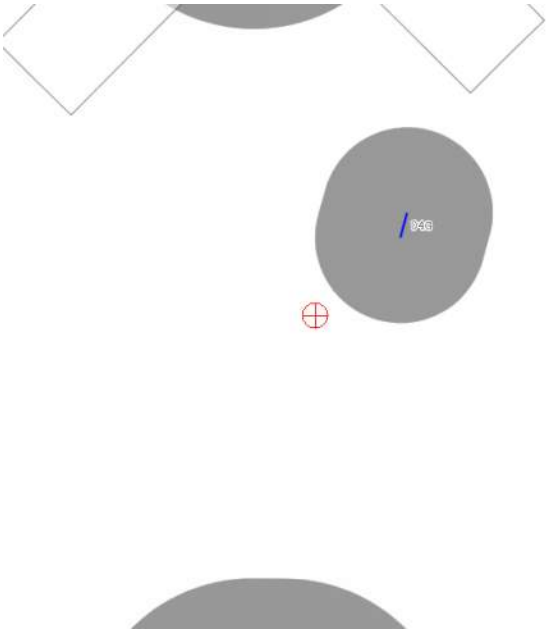
FAA Notice Criteria Tool Result:
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Structure: 149673_6
Latitude: 41-6-4.13 N
Longitude: 80-39-27.09 W
Elevation: 843 feet
Structure Height: 111 feet

Study Type: Catenary

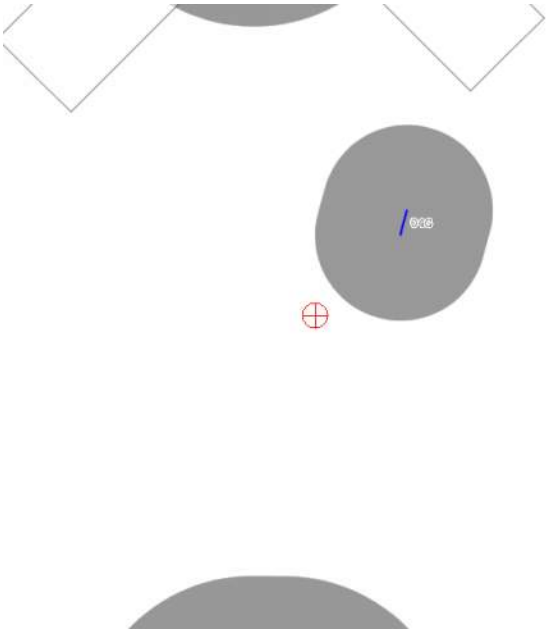
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_7
Latitude: 41-6-1.36 N
Longitude: 80-39-27.05 W
Elevation: 838 feet
Structure Height: 146 feet

Study Type: Catenary

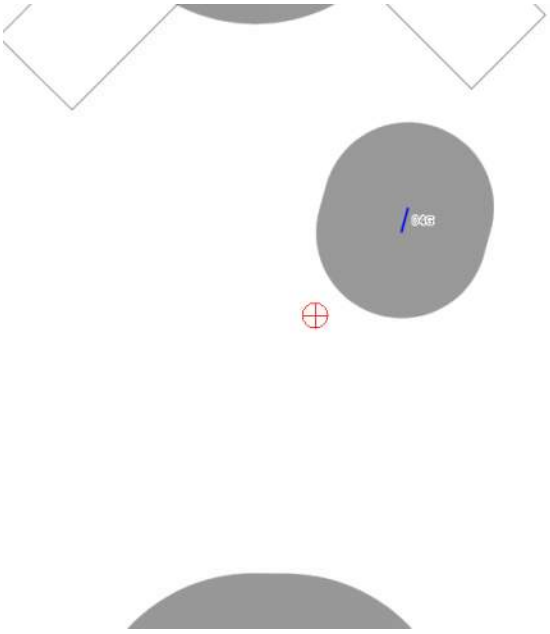
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_8
Latitude: 41-5-58.33 N
Longitude: 80-39-28.76 W
Elevation: 840 feet
Structure Height: 146 feet

Study Type: Catenary

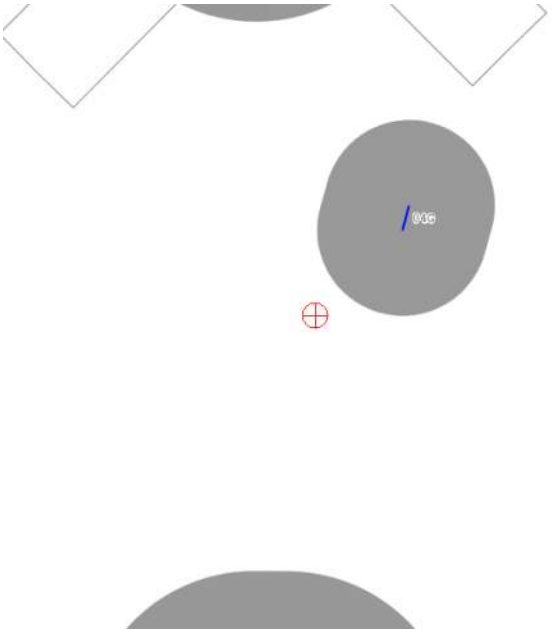
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_9
Latitude: 41-5-55.63 N
Longitude: 80-39-30.28 W
Elevation: 848 feet
Structure Height: 121 feet

Study Type: Catenary

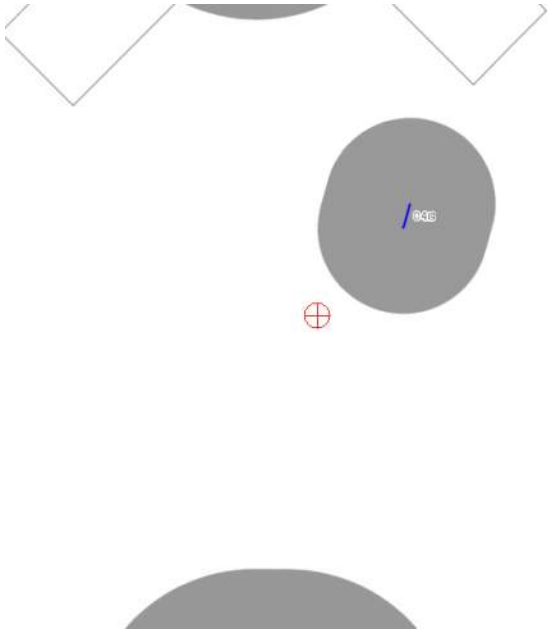
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_10
Latitude: 41-5-53.29 N
Longitude: 80-39-28.11 W
Elevation: 858 feet
Structure Height: 101 feet

Study Type: Catenary

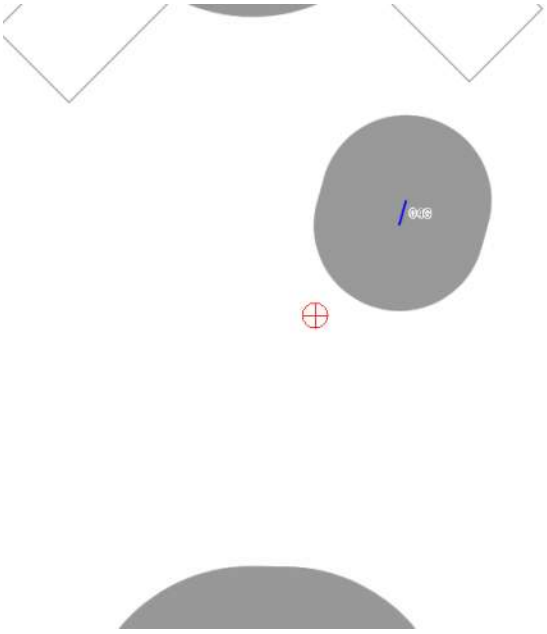
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_11
Latitude: 41-5-50.03 N
Longitude: 80-39-25.1 W
Elevation: 852 feet
Structure Height: 101 feet

Study Type: Catenary

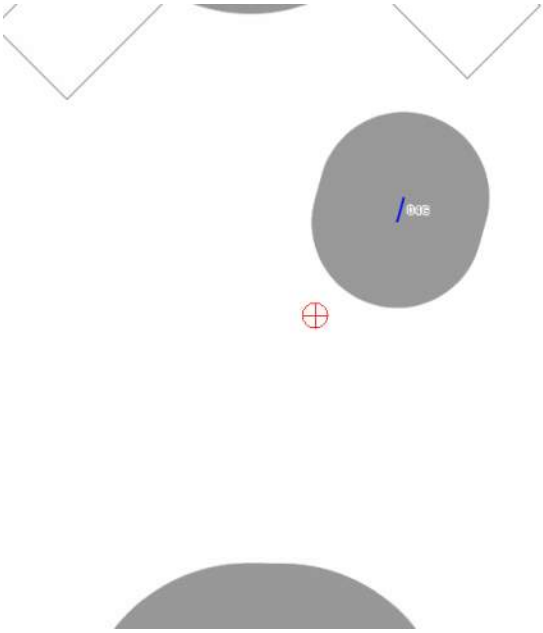
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_12
Latitude: 41-5-46.47 N
Longitude: 80-39-21.81 W
Elevation: 864 feet
Structure Height: 106 feet

Study Type: Catenary

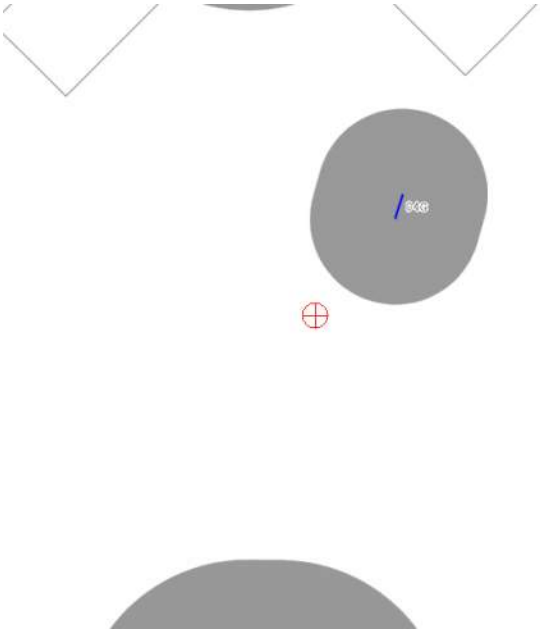
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_13
Latitude: 41-5-42.6 N
Longitude: 80-39-19.32 W
Elevation: 879 feet
Structure Height: 116 feet

Study Type: Catenary

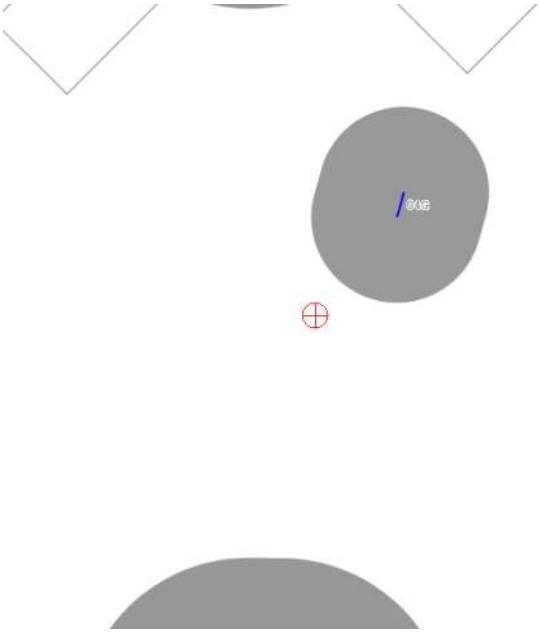
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_14
Latitude: 41-5-40.45 N
Longitude: 80-39-21.15 W
Elevation: 945 feet
Structure Height: 116 feet

Study Type: Catenary

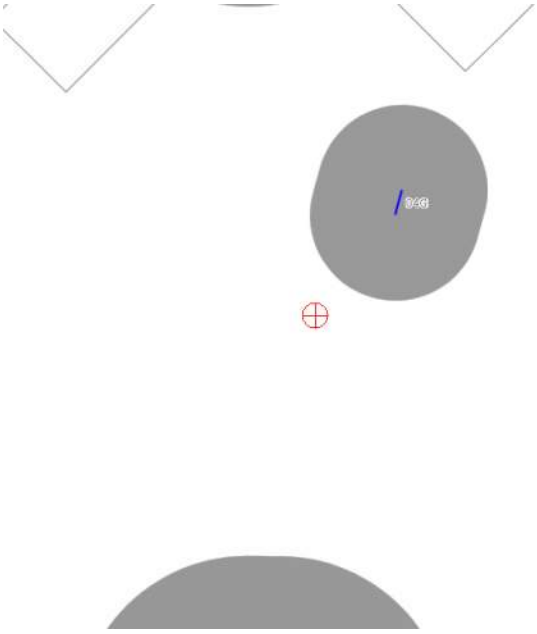
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_15
Latitude: 41-5-38.13 N
Longitude: 80-39-19.23 W
Elevation: 950 feet
Structure Height: 126 feet

Study Type: Catenary

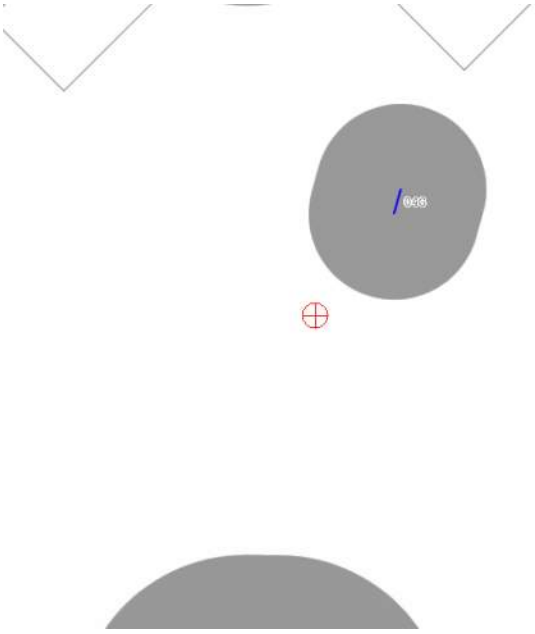
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_16
Latitude: 41-5-36.95 N
Longitude: 80-39-17.23 W
Elevation: 943 feet
Structure Height: 141 feet

Study Type: Catenary

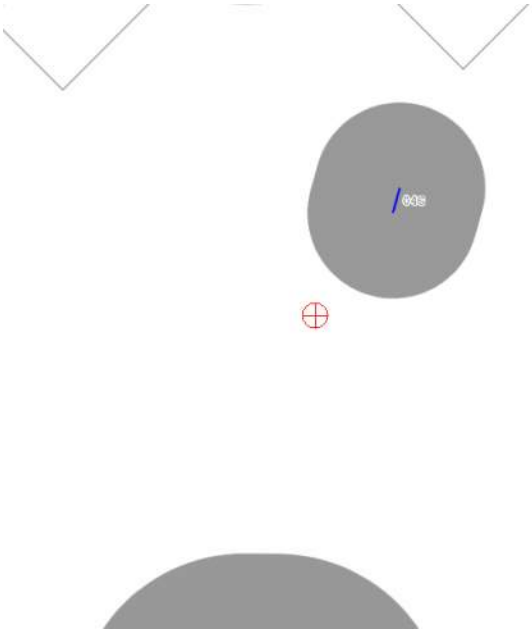
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_17
Latitude: 41-5-35.47 N
Longitude: 80-39-15.46 W
Elevation: 941 feet
Structure Height: 146 feet

Study Type: Catenary

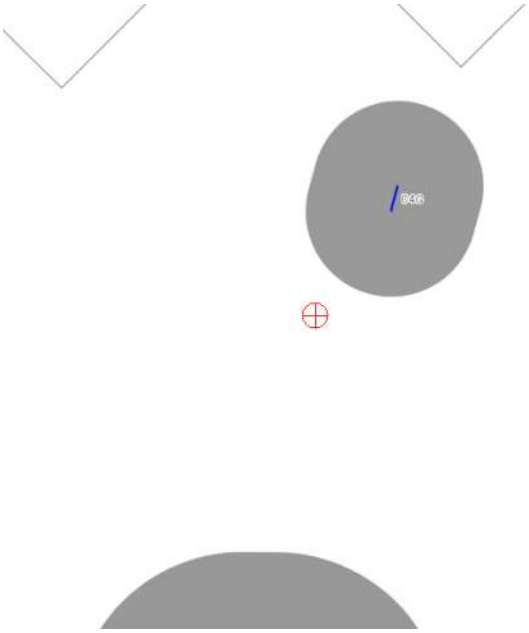
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_18
Latitude: 41-5-33.54 N
Longitude: 80-39-12.75 W
Elevation: 950 feet
Structure Height: 111 feet

Study Type: Catenary

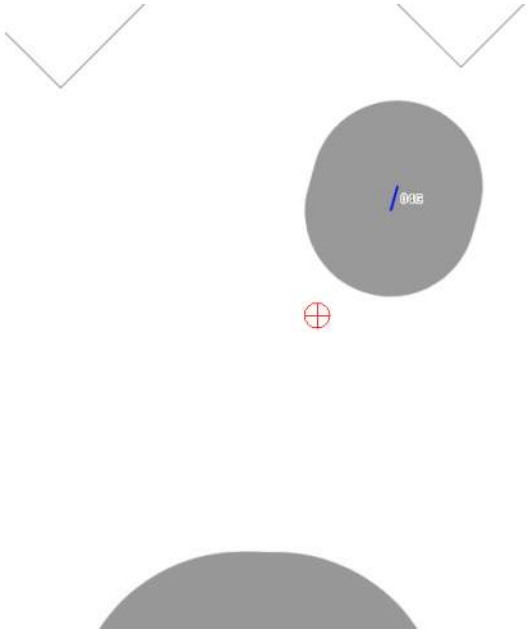
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_19
Latitude: 41-5-33.25 N
Longitude: 80-39-8.43 W
Elevation: 953 feet
Structure Height: 91 feet

Study Type: Catenary

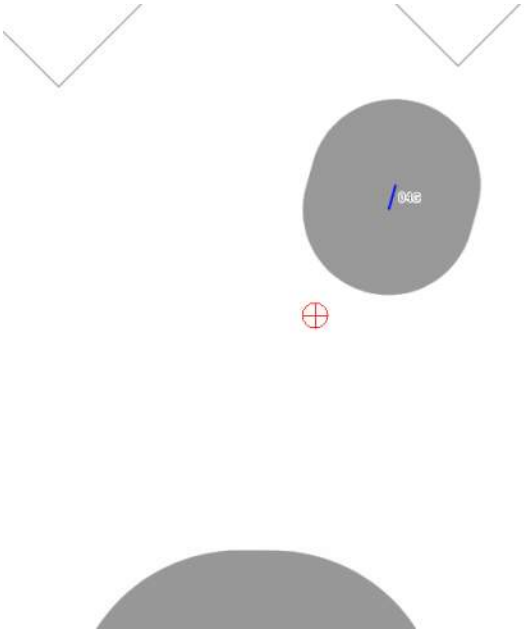
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_20
Latitude: 41-5-31.56 N
Longitude: 80-39-8.28 W
Elevation: 950 feet
Structure Height: 86 feet

Study Type: Catenary

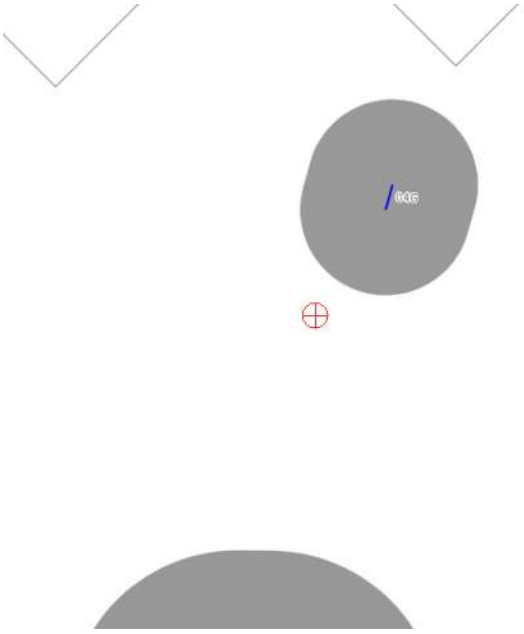
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_21
Latitude: 41-5-31.77 N
Longitude: 80-39-4.24 W
Elevation: 947 feet
Structure Height: 96 feet

Study Type: Catenary

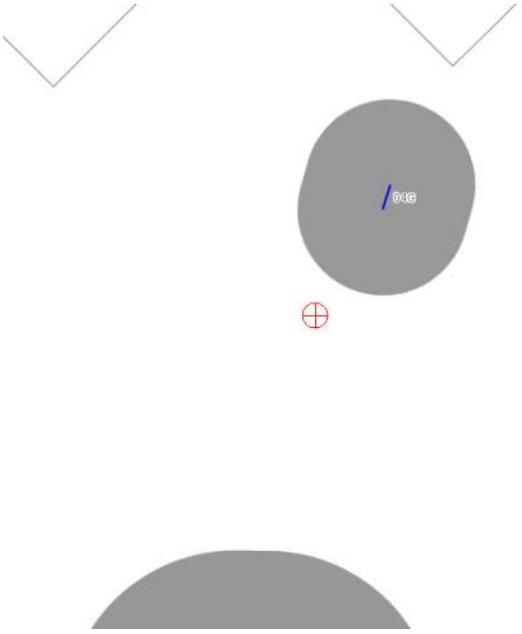
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_22
Latitude: 41-5-31.93 N
Longitude: 80-39-0.19 W
Elevation: 941 feet
Structure Height: 96 feet

Study Type: Catenary

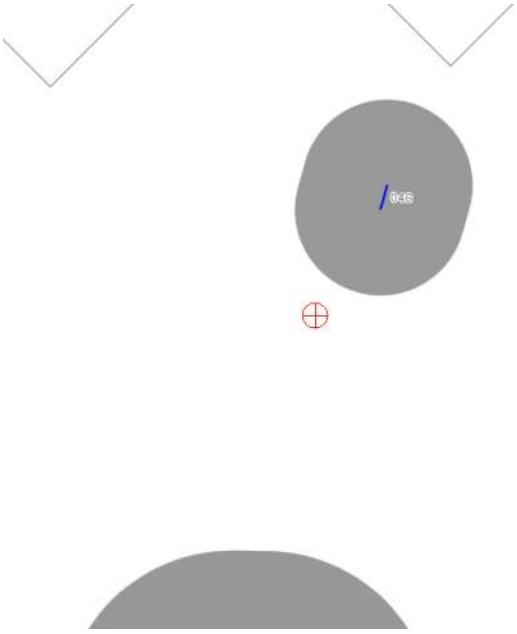
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_23
Latitude: 41-5-32.05 N
Longitude: 80-38-56.14 W
Elevation: 934 feet
Structure Height: 86 feet

Study Type: Catenary

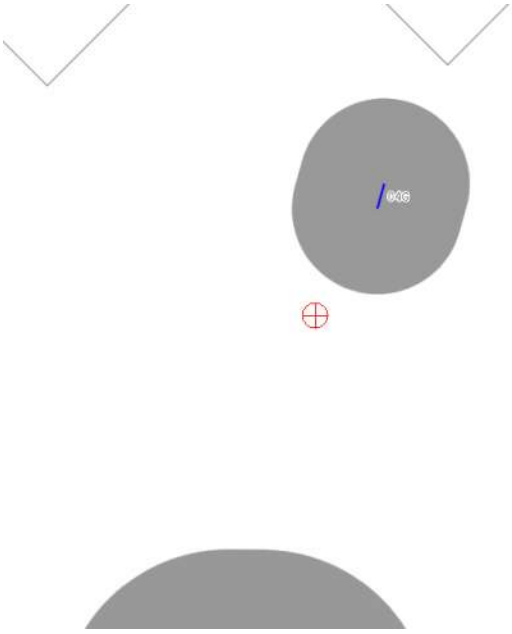
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_24
Latitude: 41-5-30.59 N
Longitude: 80-38-51.58 W
Elevation: 923 feet
Structure Height: 96 feet

Study Type: Catenary

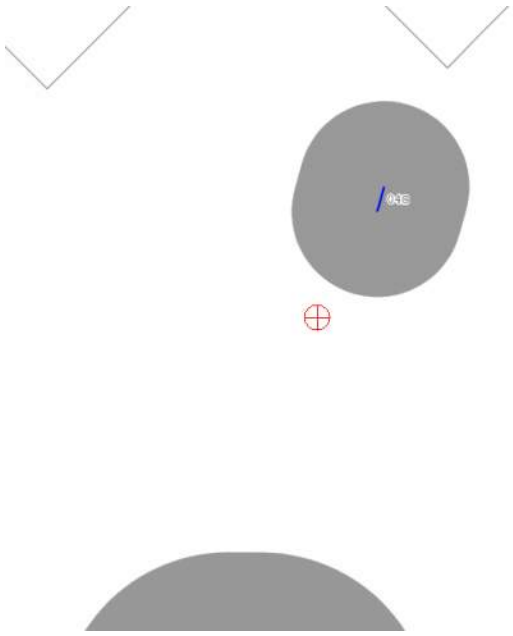
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_25
Latitude: 41-5-31.52 N
Longitude: 80-38-48.1 W
Elevation: 897 feet
Structure Height: 116 feet

Study Type: Catenary

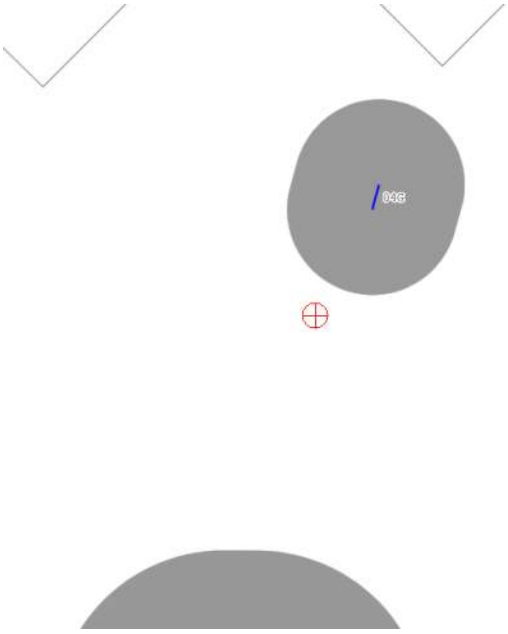
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_26
Latitude: 41-5-31.57 N
Longitude: 80-38-44.08 W
Elevation: 885 feet
Structure Height: 121 feet

Study Type: Catenary

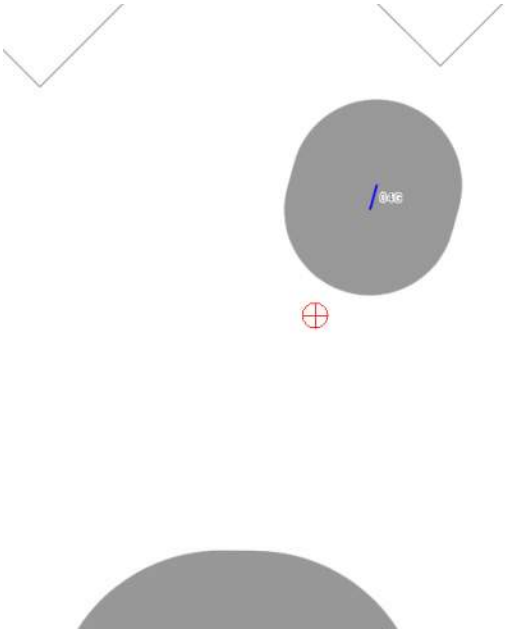
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_27
Latitude: 41-5-31.9 N
Longitude: 80-38-39.74 W
Elevation: 879 feet
Structure Height: 141 feet

Study Type: Catenary

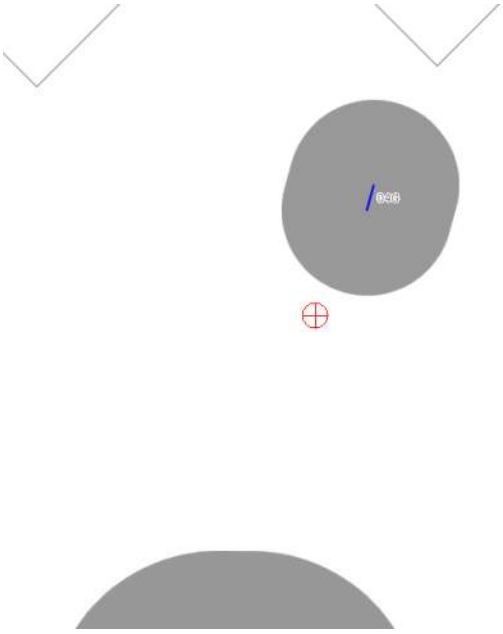
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_28
Latitude: 41-5-32.25 N
Longitude: 80-38-35.68 W
Elevation: 851 feet
Structure Height: 151 feet

Study Type: Catenary

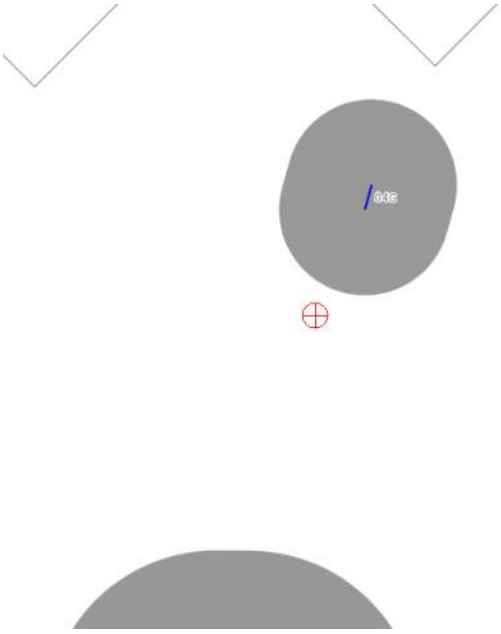
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_29
Latitude: 41-5-31.84 N
Longitude: 80-38-31.94 W
Elevation: 843 feet
Structure Height: 141 feet

Study Type: Catenary

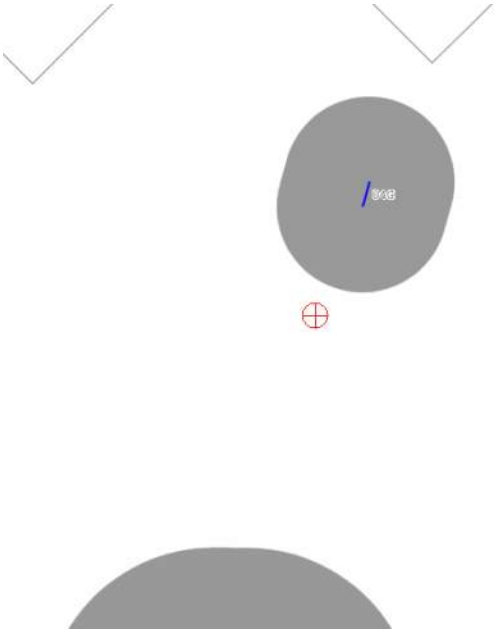
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_30
Latitude: 41-5-28.49 N
Longitude: 80-38-28.3 W
Elevation: 840 feet
Structure Height: 101 feet

Study Type: Catenary

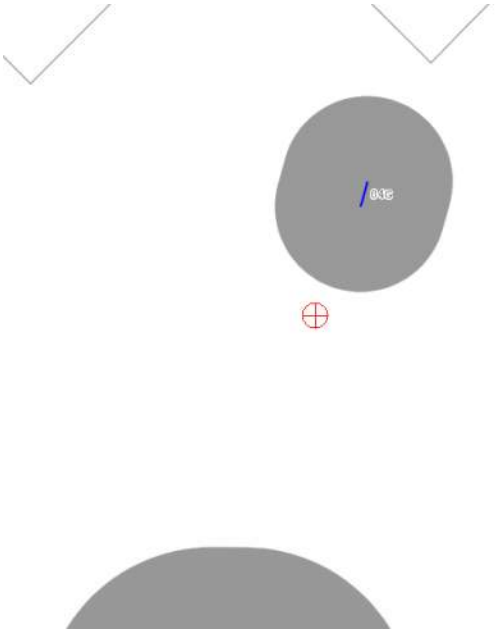
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_31
Latitude: 41-5-27.96 N
Longitude: 80-38-25.43 W
Elevation: 844 feet
Structure Height: 91 feet

Study Type: Catenary

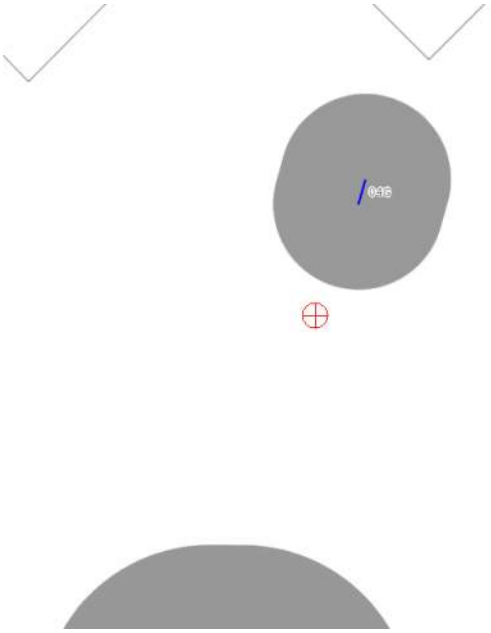
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_32
Latitude: 41-5-25.31 N
Longitude: 80-38-22.72 W
Elevation: 850 feet
Structure Height: 91 feet

Study Type: Catenary

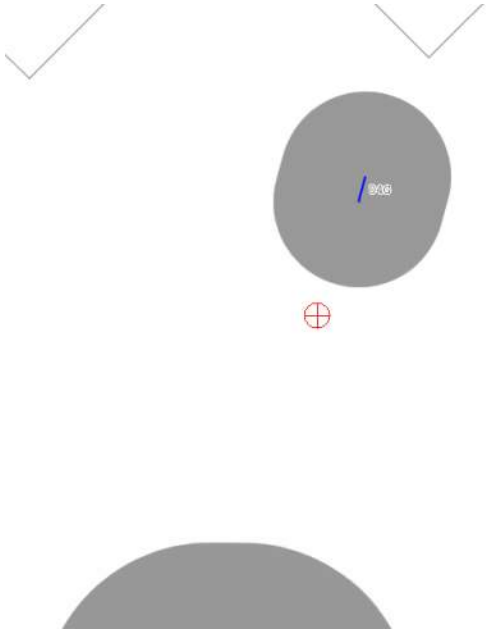
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_33
Latitude: 41-5-22.66 N
Longitude: 80-38-20 W
Elevation: 854 feet
Structure Height: 91 feet

Study Type: Catenary

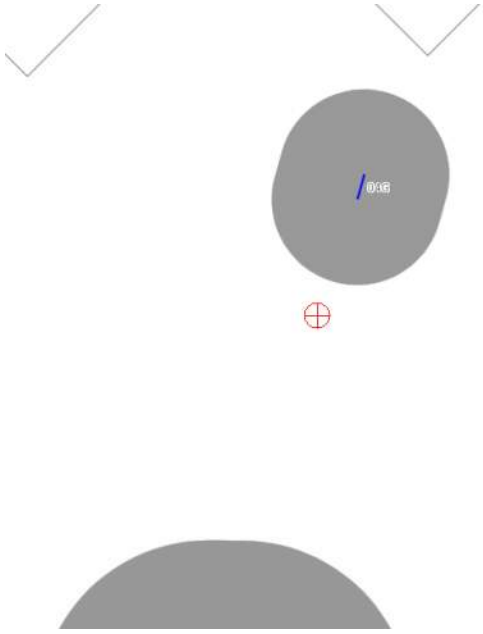
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_34
Latitude: 41-5-20.01 N
Longitude: 80-38-17.29 W
Elevation: 858 feet
Structure Height: 91 feet

Study Type: Catenary

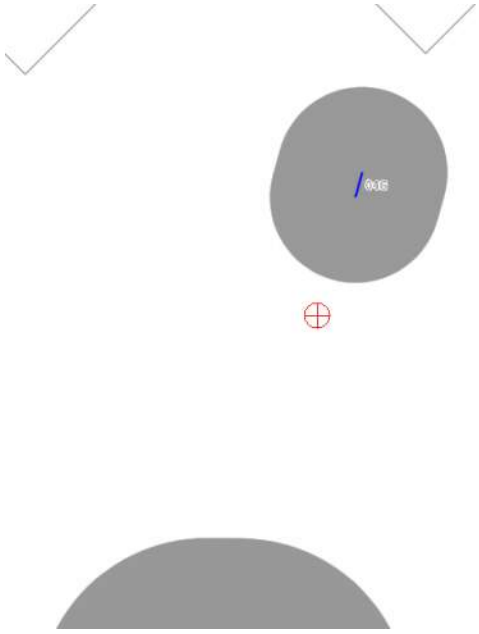
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_35
Latitude: 41-5-17.36 N
Longitude: 80-38-14.58 W
Elevation: 859 feet
Structure Height: 81 feet

Study Type: Catenary

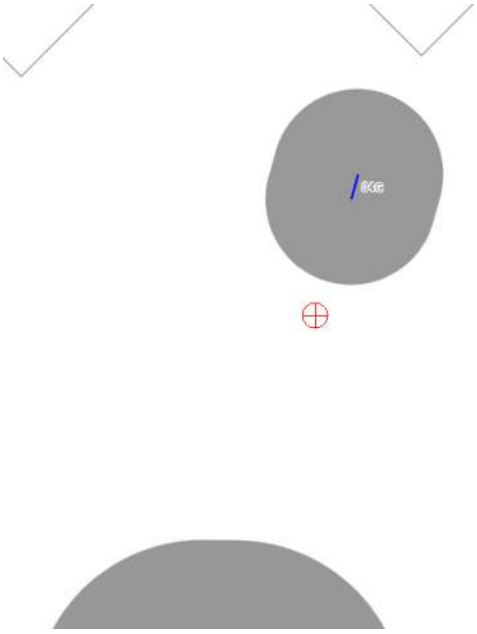
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_36
Latitude: 41-5-19.67 N
Longitude: 80-38-10.91 W
Elevation: 844 feet
Structure Height: 91 feet

Study Type: Catenary

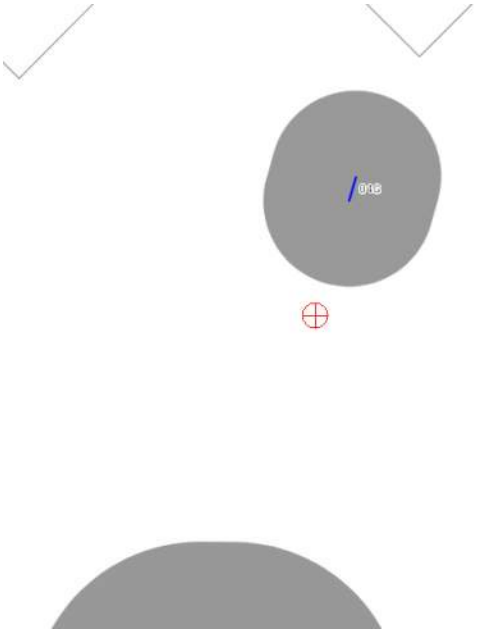
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_37
Latitude: 41-5-21.69 N
Longitude: 80-38-7.68 W
Elevation: 841 feet
Structure Height: 96 feet

Study Type: Catenary

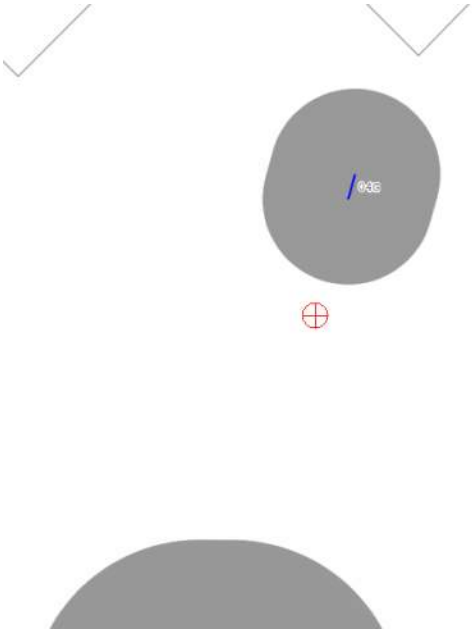
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_38
Latitude: 41-5-19.4 N
Longitude: 80-38-6.53 W
Elevation: 841 feet
Structure Height: 95 feet

Study Type: Catenary

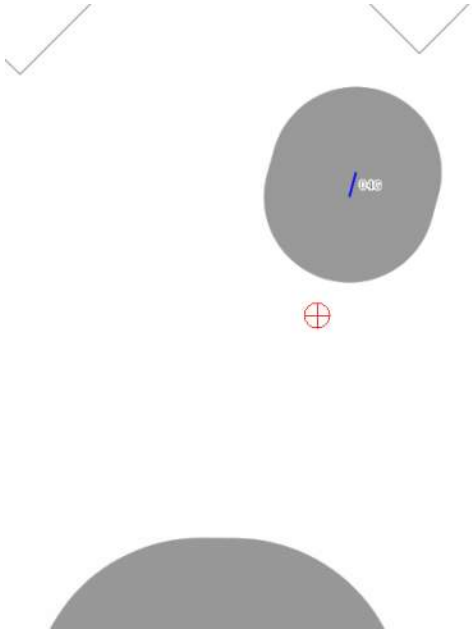
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_39
Latitude: 41-5-17.13 N
Longitude: 80-38-5.38 W
Elevation: 839 feet
Structure Height: 100 feet

Study Type: Catenary

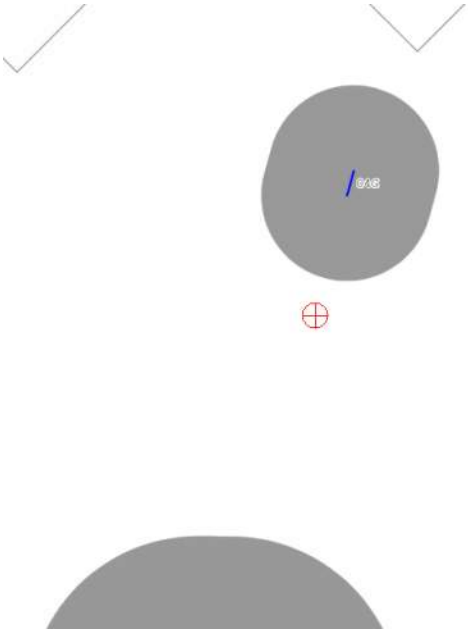
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_40
Latitude: 41-5-15.25 N
Longitude: 80-38-4.43 W
Elevation: 839 feet
Structure Height: 95 feet

Study Type: Catenary

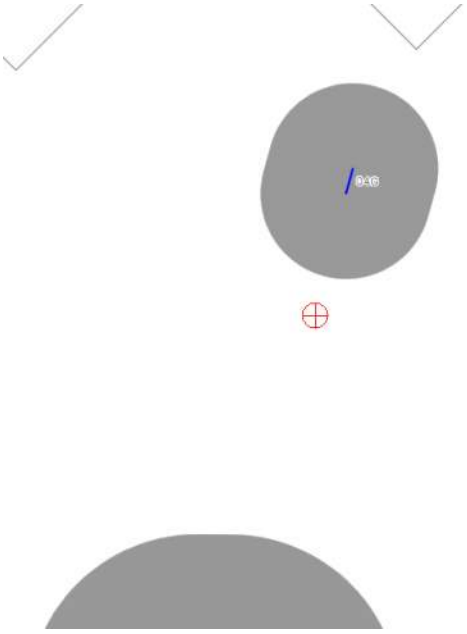
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_41
Latitude: 41-5-13.01 N
Longitude: 80-38-3.31 W
Elevation: 838 feet
Structure Height: 105 feet

Study Type: Catenary

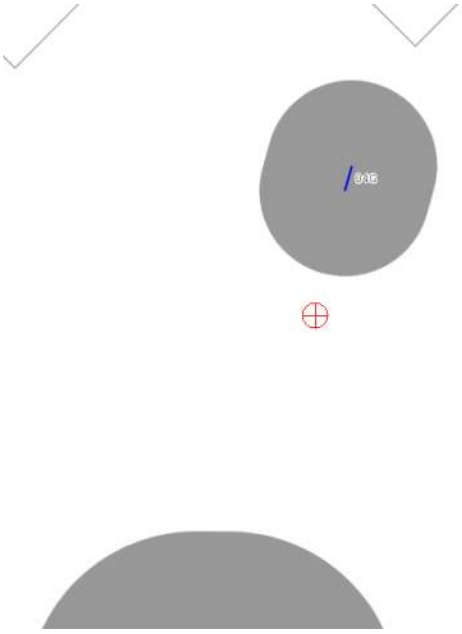
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_42
Latitude: 41-5-9.6 N
Longitude: 80-38-1.59 W
Elevation: 835 feet
Structure Height: 116 feet

Study Type: Catenary

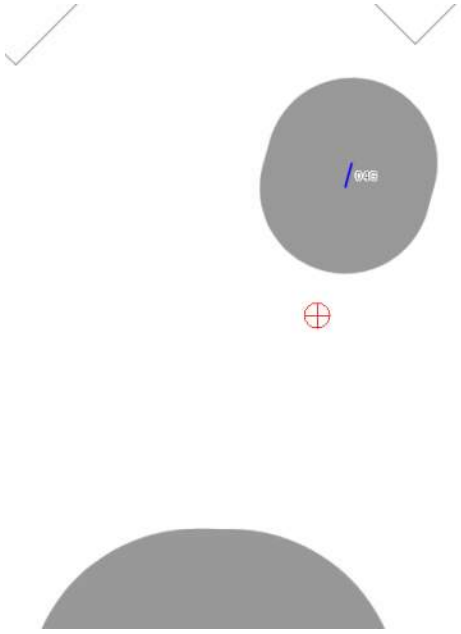
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_43
Latitude: 41-5-6.69 N
Longitude: 80-37-59.04 W
Elevation: 842 feet
Structure Height: 96 feet

Study Type: Catenary

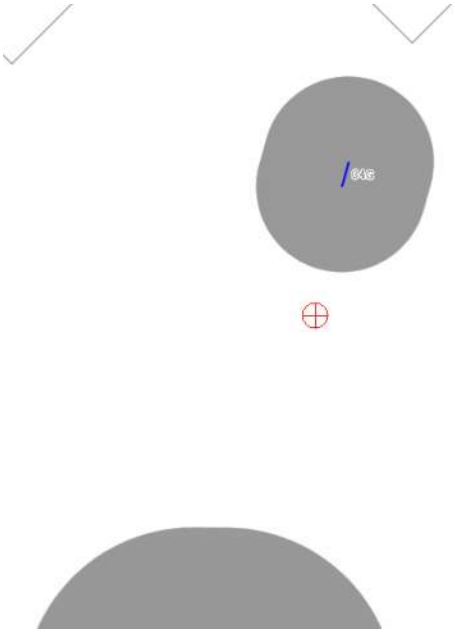
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_44
Latitude: 41-5-5.02 N
Longitude: 80-37-56.52 W
Elevation: 836 feet
Structure Height: 106 feet

Study Type: Catenary

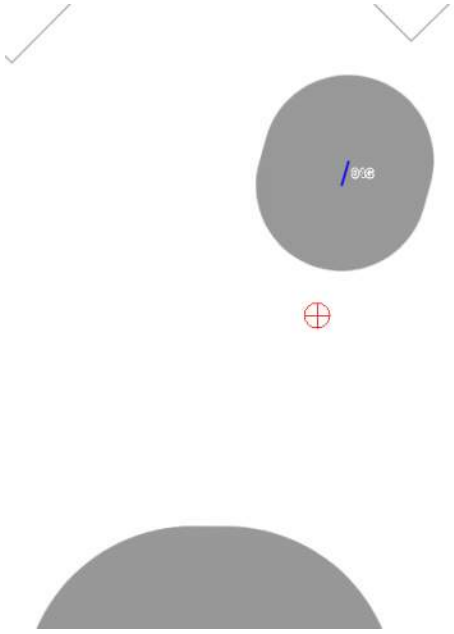
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_45
Latitude: 41-5-3.52 N
Longitude: 80-37-53.22 W
Elevation: 841 feet
Structure Height: 91 feet

Study Type: Catenary

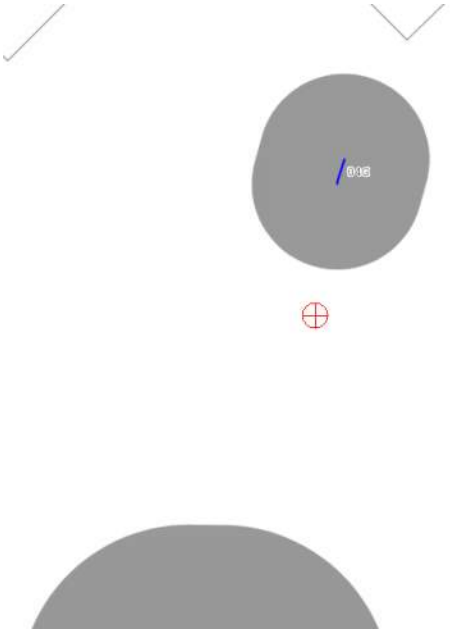
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_46
Latitude: 41-5-2.01 N
Longitude: 80-37-49.93 W
Elevation: 840 feet
Structure Height: 91 feet

Study Type: Catenary

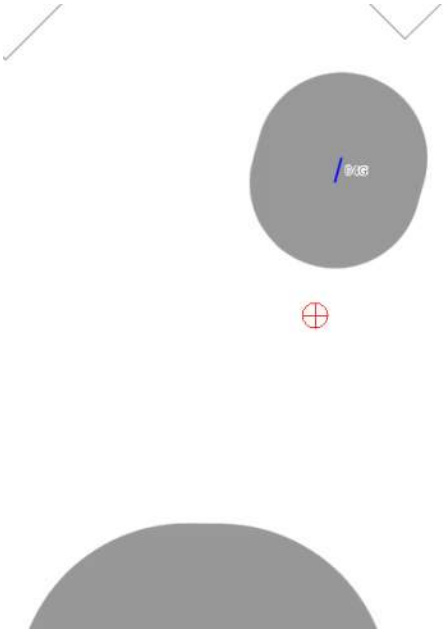
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_47
Latitude: 41-5-0.51 N
Longitude: 80-37-46.63 W
Elevation: 835 feet
Structure Height: 86 feet

Study Type: Catenary

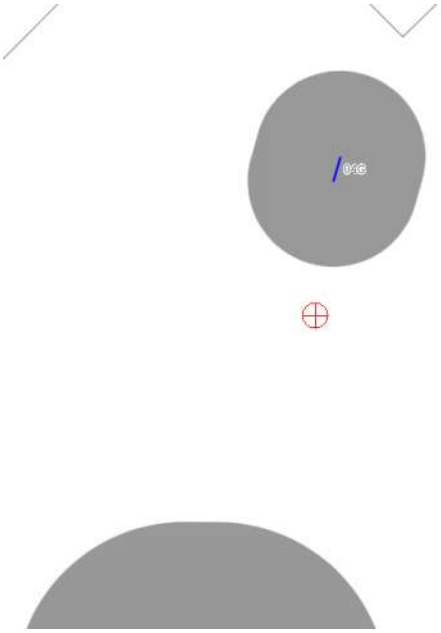
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_48
Latitude: 41-4-58.68 N
Longitude: 80-37-43.66 W
Elevation: 837 feet
Structure Height: 82 feet

Study Type: Catenary

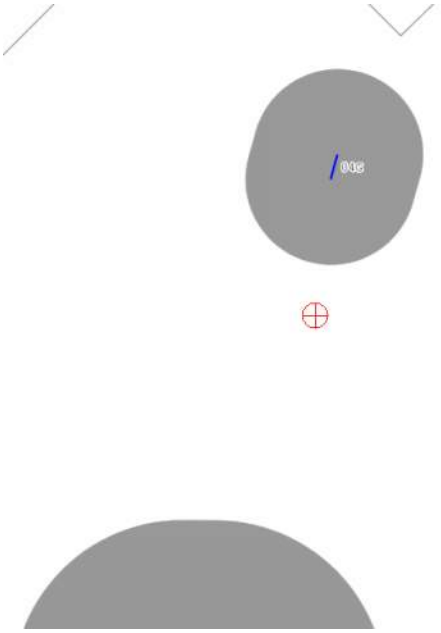
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_49
Latitude: 41-4-56.55 N
Longitude: 80-37-40.21 W
Elevation: 834 feet
Structure Height: 77 feet

Study Type: Catenary

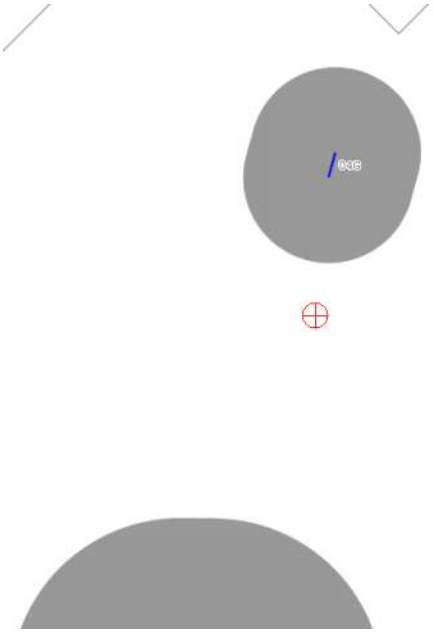
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_50
Latitude: 41-4-54.41 N
Longitude: 80-37-36.73 W
Elevation: 833 feet
Structure Height: 86 feet

Study Type: Catenary

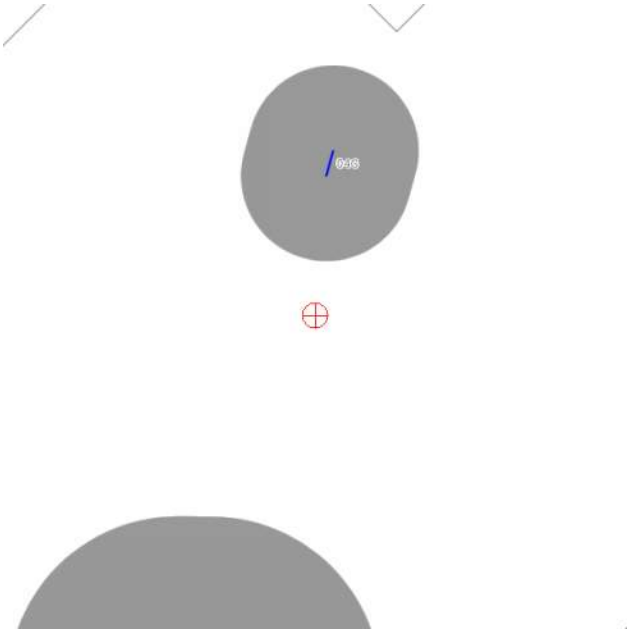
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_51
Latitude: 41-4-52.26 N
Longitude: 80-37-33.24 W
Elevation: 834 feet
Structure Height: 82 feet

Study Type: Catenary

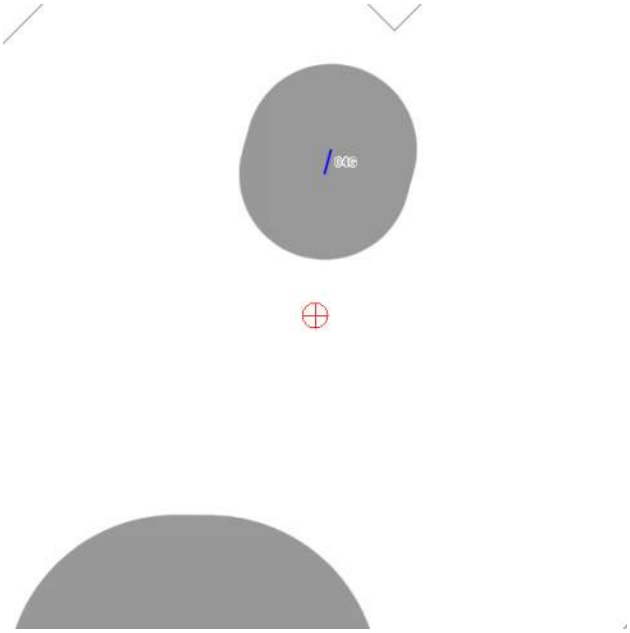
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_52
Latitude: 41-4-50.57 N
Longitude: 80-37-30.5 W
Elevation: 834 feet
Structure Height: 82 feet

Study Type: Catenary

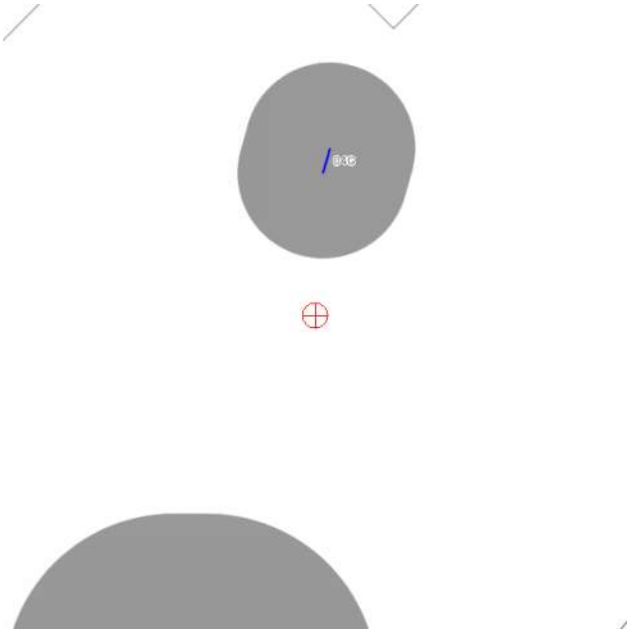
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_53
Latitude: 41-4-48.99 N
Longitude: 80-37-27.94 W
Elevation: 833 feet
Structure Height: 100 feet

Study Type: Catenary

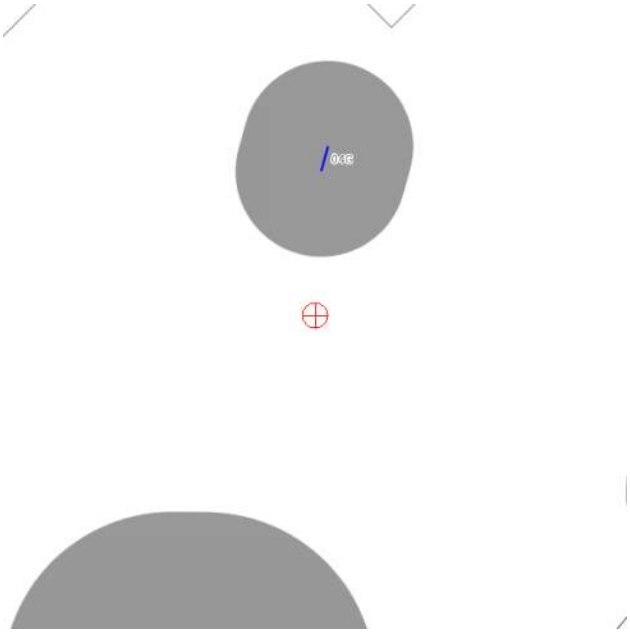
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_54
Latitude: 41-4-47.12 N
Longitude: 80-37-24.9 W
Elevation: 836 feet
Structure Height: 100 feet

Study Type: Catenary

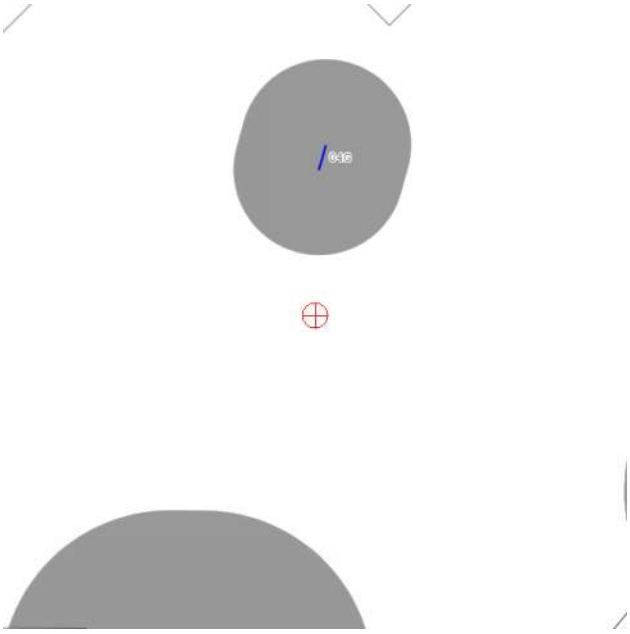
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_55
Latitude: 41-4-45.22 N
Longitude: 80-37-21.82 W
Elevation: 835 feet
Structure Height: 111 feet

Study Type: Catenary

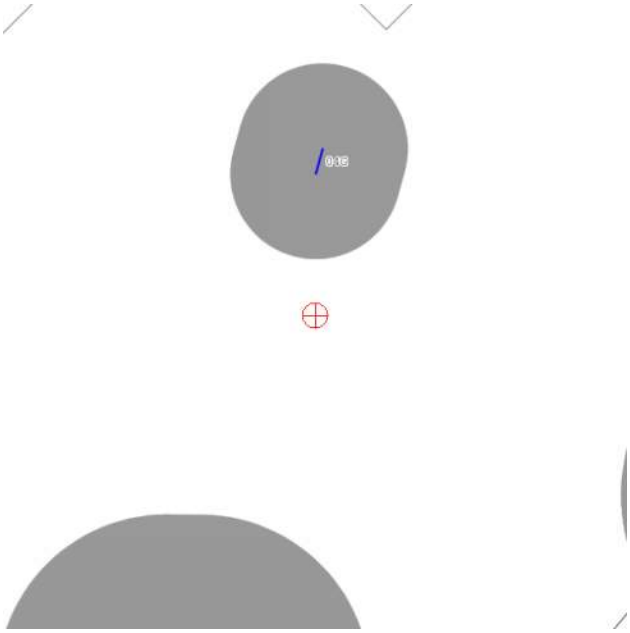
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_56
Latitude: 41-4-49.94 N
Longitude: 80-37-16.74 W
Elevation: 836 feet
Structure Height: 131 feet

Study Type: Catenary

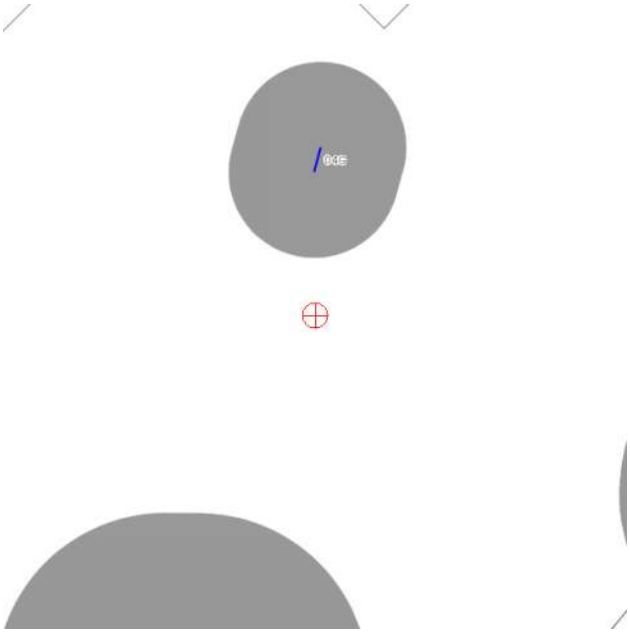
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_57
Latitude: 41-4-48.35 N
Longitude: 80-37-14.32 W
Elevation: 836 feet
Structure Height: 121 feet

Study Type: Catenary

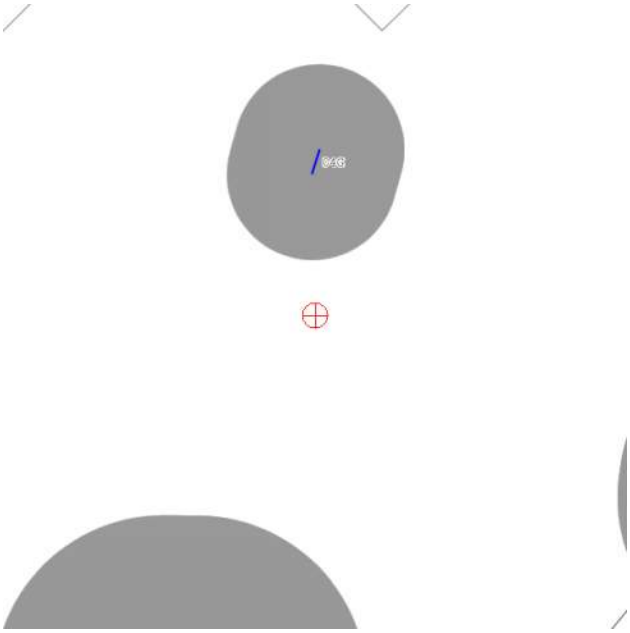
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_58
Latitude: 41-4-50.97 N
Longitude: 80-37-11.55 W
Elevation: 841 feet
Structure Height: 113 feet

Study Type: Catenary

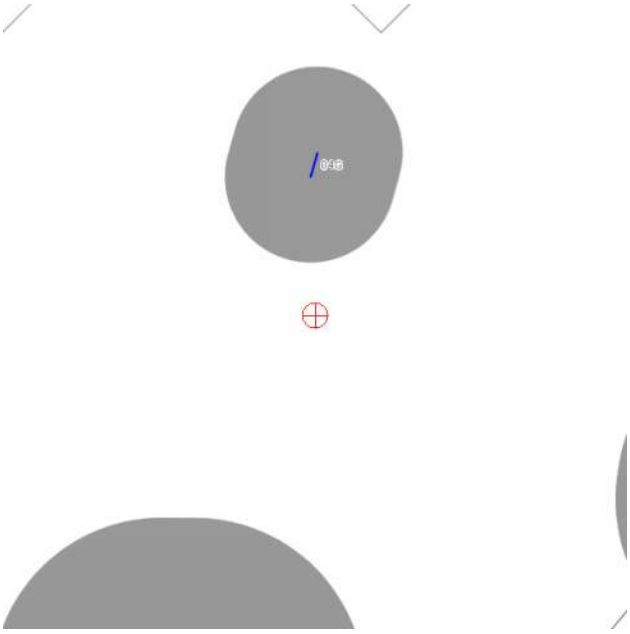
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_59
Latitude: 41-4-53.79 N
Longitude: 80-37-8.56 W
Elevation: 854 feet
Structure Height: 91 feet

Study Type: Catenary

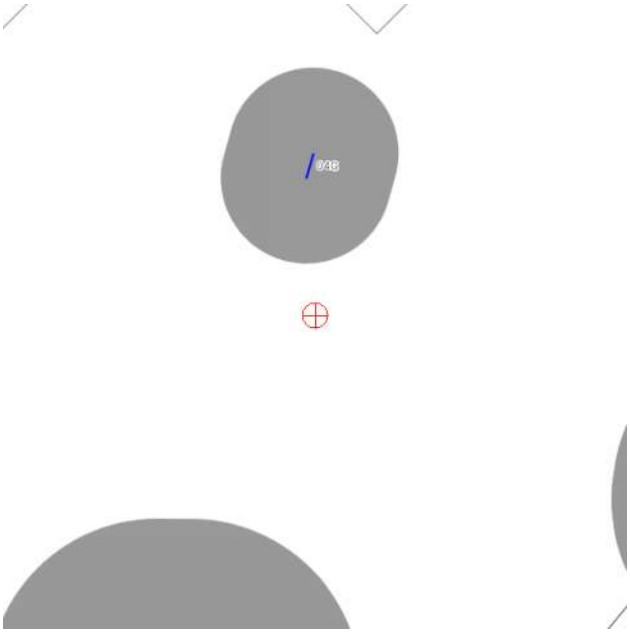
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_60
Latitude: 41-4-54.93 N
Longitude: 80-37-2.26 W
Elevation: 848 feet
Structure Height: 116 feet

Study Type: Catenary

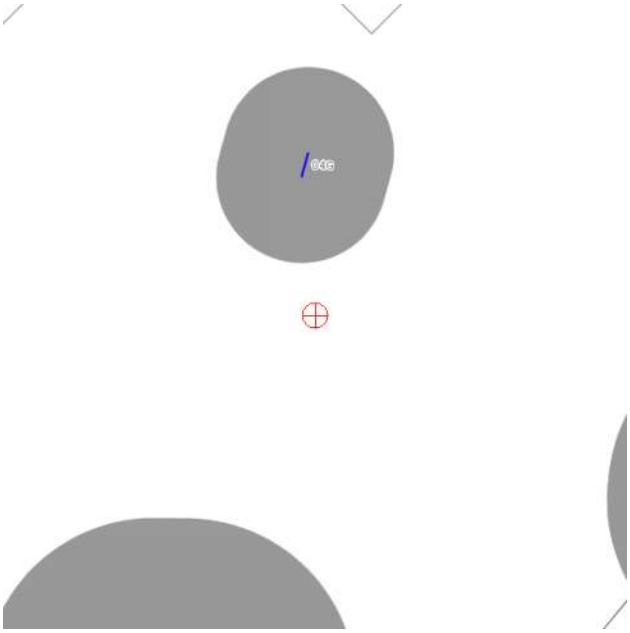
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_61
Latitude: 41-4-54.3 N
Longitude: 80-36-55.31 W
Elevation: 852 feet
Structure Height: 141 feet

Study Type: Catenary

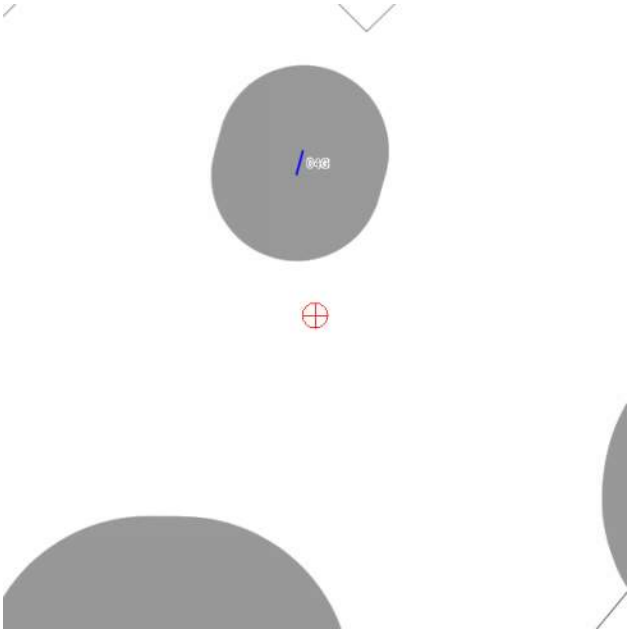
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_62
Latitude: 41-4-52.08 N
Longitude: 80-36-47.54 W
Elevation: 860 feet
Structure Height: 131 feet

Study Type: Catenary

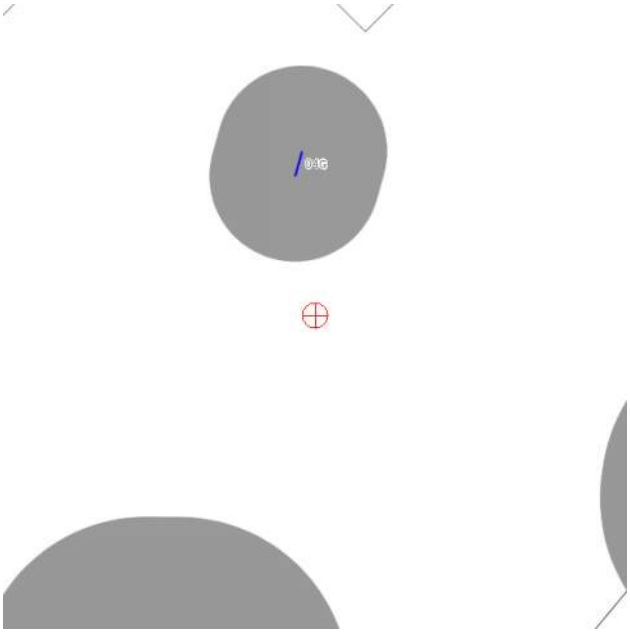
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_63
Latitude: 41-4-52.72 N
Longitude: 80-36-44.74 W
Elevation: 878 feet
Structure Height: 113 feet

Study Type: Catenary

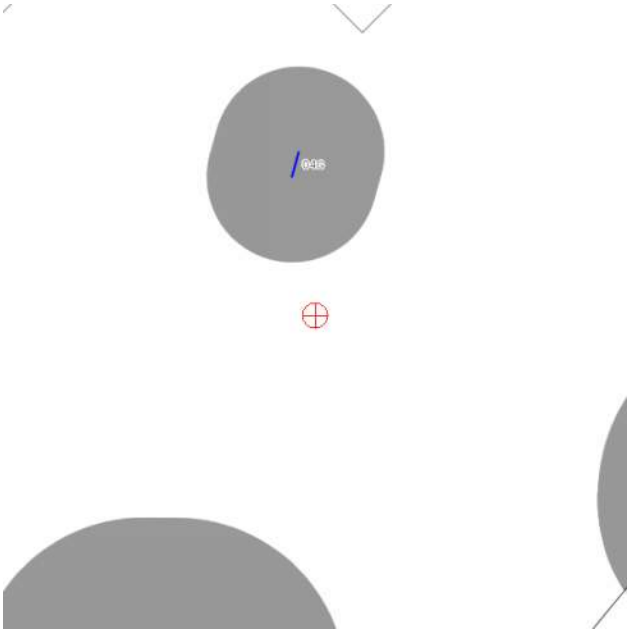
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_64
Latitude: 41-4-53.67 N
Longitude: 80-36-40.63 W
Elevation: 894 feet
Structure Height: 86 feet

Study Type: Catenary

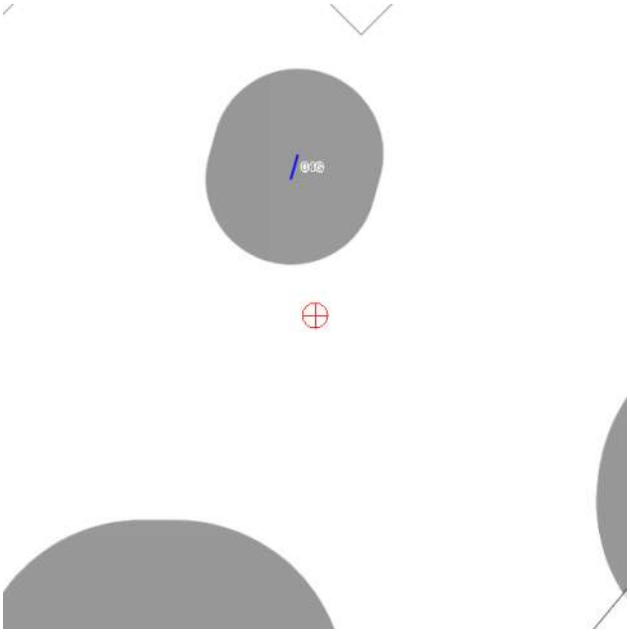
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_65
Latitude: 41-4-56.22 N
Longitude: 80-36-39 W
Elevation: 930 feet
Structure Height: 91 feet

Study Type: Catenary

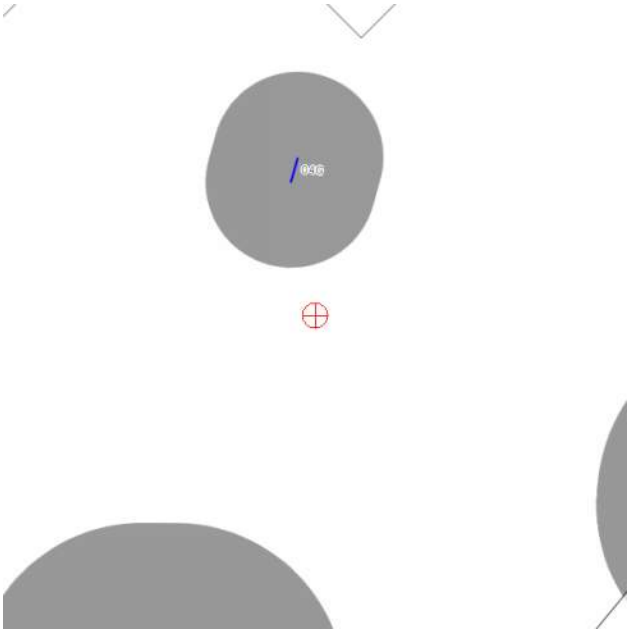
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_66
Latitude: 41-4-59.77 N
Longitude: 80-36-38.98 W
Elevation: 958 feet
Structure Height: 77 feet

Study Type: Catenary

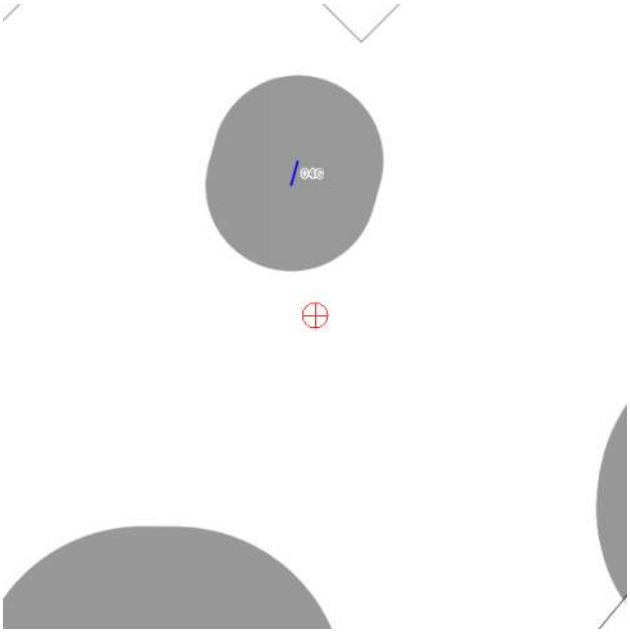
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_67
Latitude: 41-5-3.88 N
Longitude: 80-36-38.96 W
Elevation: 996 feet
Structure Height: 77 feet

Study Type: Catenary

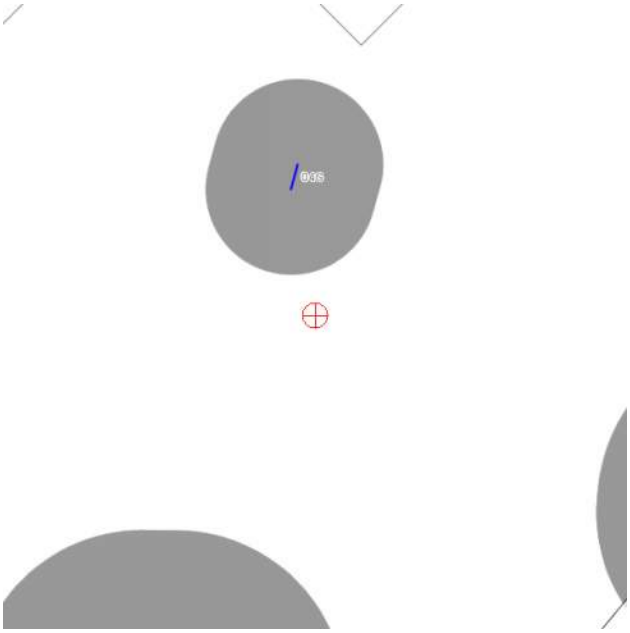
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_68
Latitude: 41-5-8.05 N
Longitude: 80-36-38.93 W
Elevation: 1027 feet
Structure Height: 77 feet

Study Type: Catenary

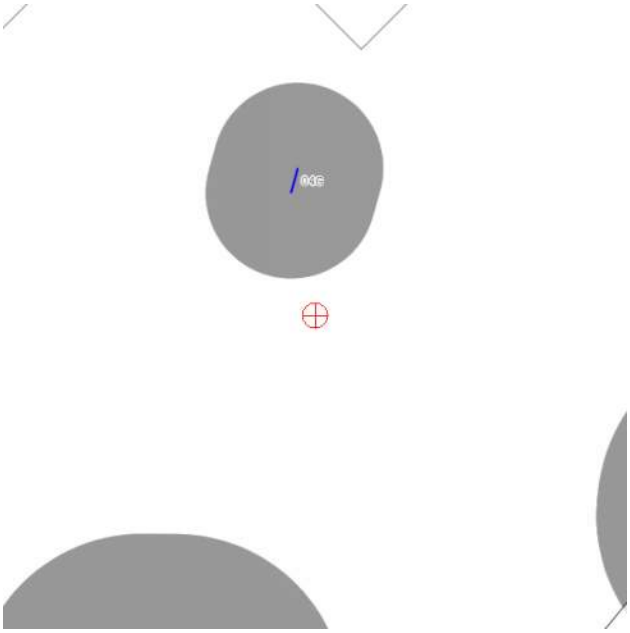
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_69
Latitude: 41-5-12.41 N
Longitude: 80-36-38.91 W
Elevation: 1040 feet
Structure Height: 97 feet

Study Type: Catenary

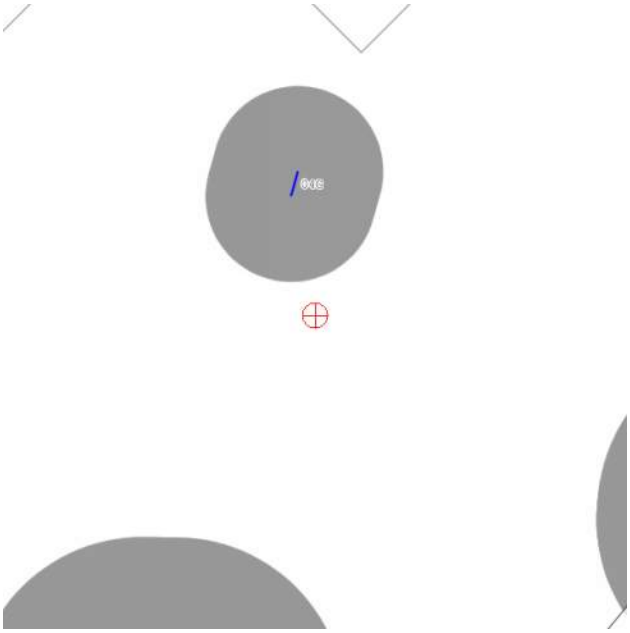
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_70
Latitude: 41-5-16.26 N
Longitude: 80-36-38.88 W
Elevation: 1054 feet
Structure Height: 86 feet

Study Type: Catenary

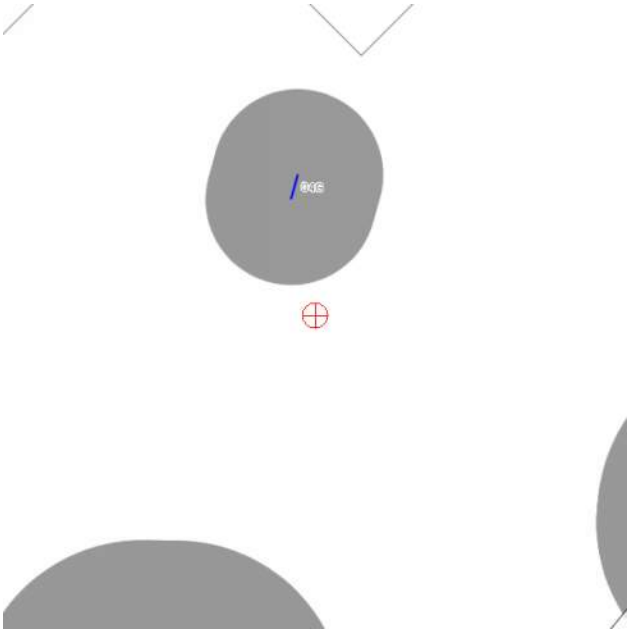
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_71
Latitude: 41-5-19.87 N
Longitude: 80-36-38.86 W
Elevation: 1063 feet
Structure Height: 81 feet

Study Type: Catenary

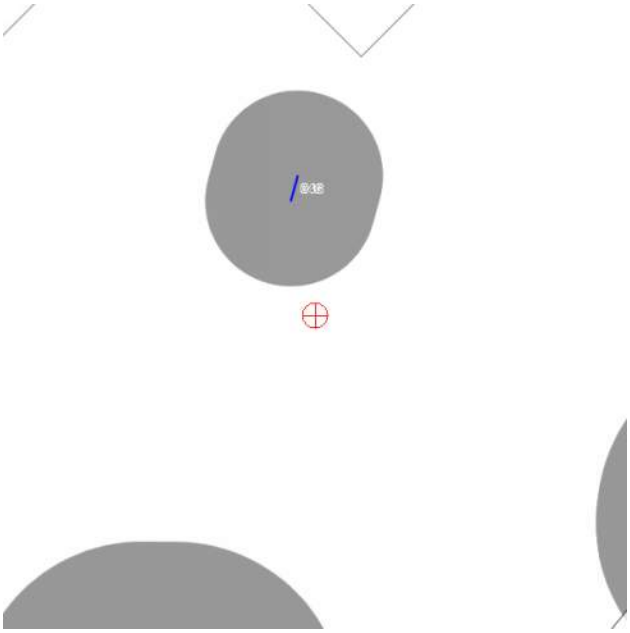
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_72
Latitude: 41-5-21.46 N
Longitude: 80-36-38.36 W
Elevation: 1059 feet
Structure Height: 81 feet

Study Type: Catenary

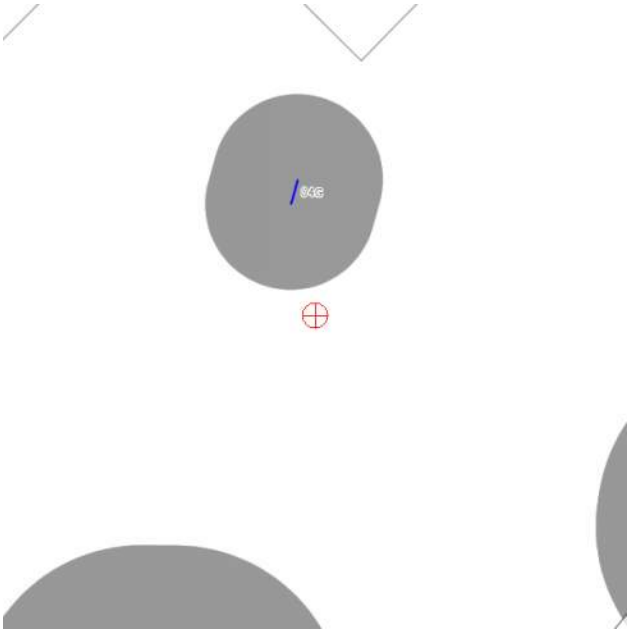
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_73
Latitude: 41-5-25.55 N
Longitude: 80-36-38.27 W
Elevation: 1050 feet
Structure Height: 96 feet

Study Type: Catenary

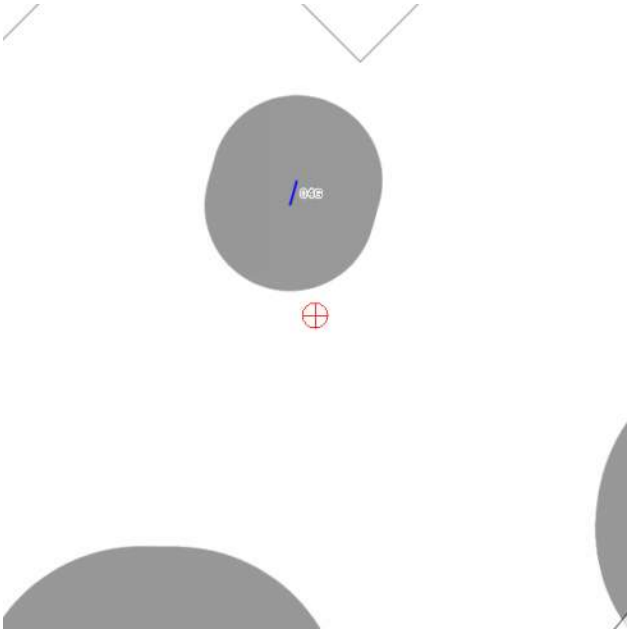
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_74
Latitude: 41-5-26.98 N
Longitude: 80-36-37.4 W
Elevation: 1050 feet
Structure Height: 106 feet

Study Type: Catenary

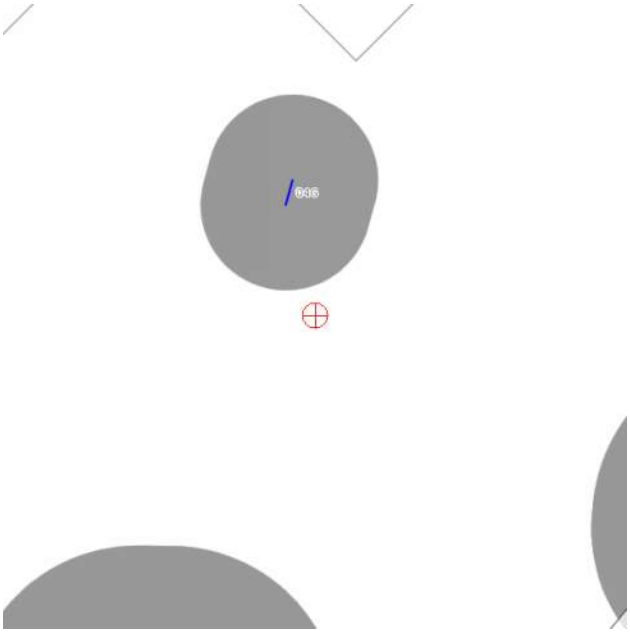
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_75
Latitude: 41-5-26.13 N
Longitude: 80-36-31.08 W
Elevation: 1062 feet
Structure Height: 101 feet

Study Type: Catenary

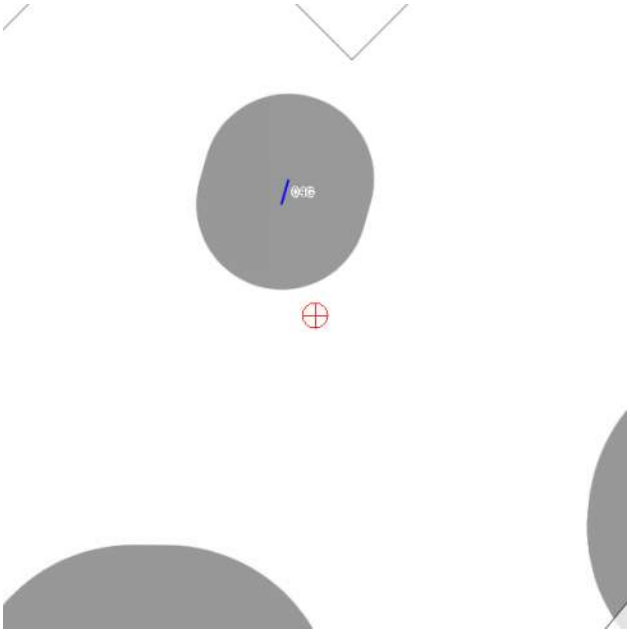
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_76
Latitude: 41-5-25.27 N
Longitude: 80-36-24.64 W
Elevation: 1068 feet
Structure Height: 131 feet

Study Type: Catenary

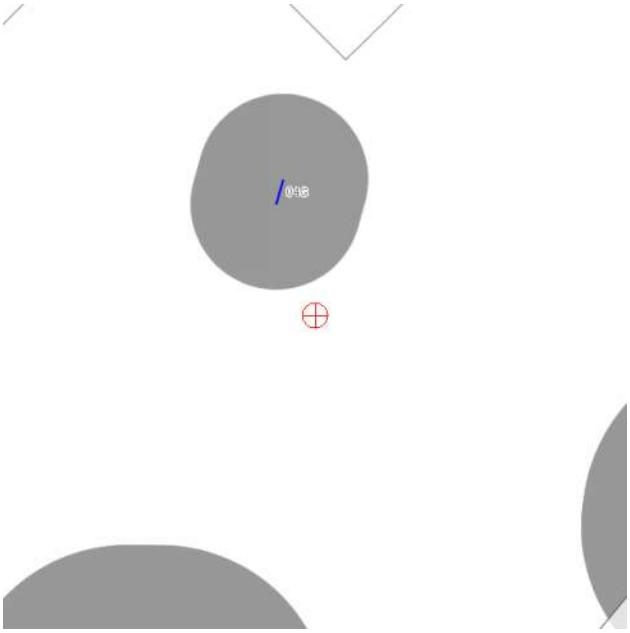
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_77
Latitude: 41-5-25.25 N
Longitude: 80-36-15.75 W
Elevation: 1076 feet
Structure Height: 126 feet

Study Type: Catenary

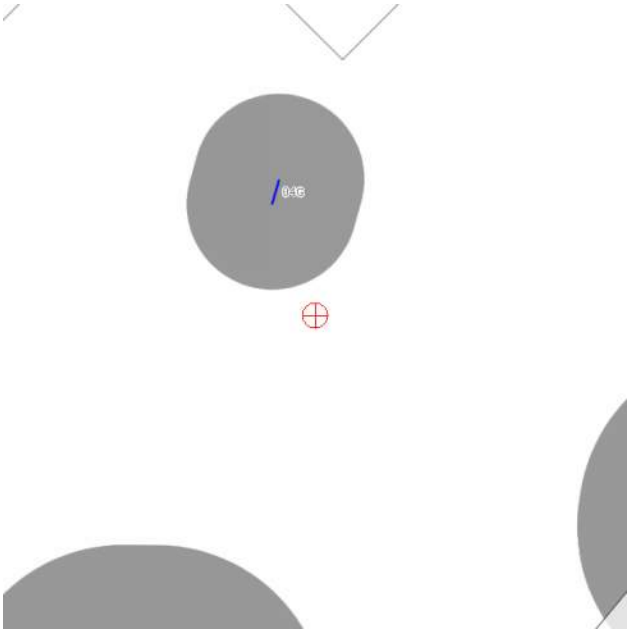
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_78
Latitude: 41-5-25.25 N
Longitude: 80-36-9.76 W
Elevation: 1078 feet
Structure Height: 121 feet

Study Type: Catenary

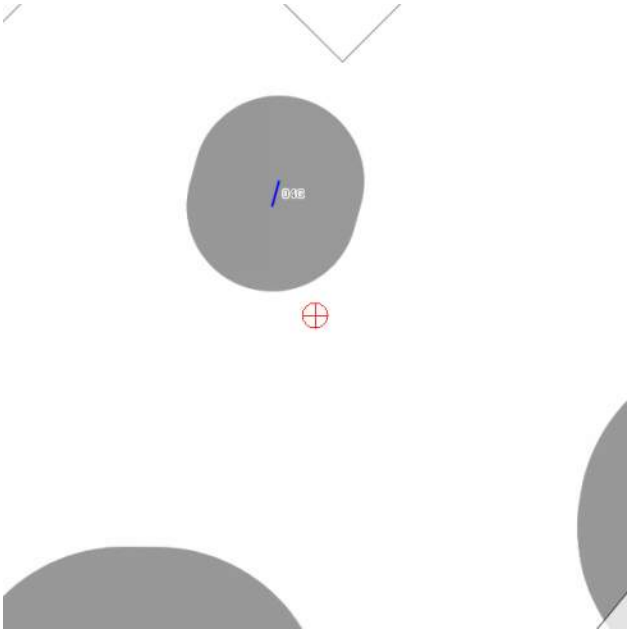
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_79
Latitude: 41-5-27.41 N
Longitude: 80-36-9.72 W
Elevation: 1079 feet
Structure Height: 106 feet

Study Type: Catenary

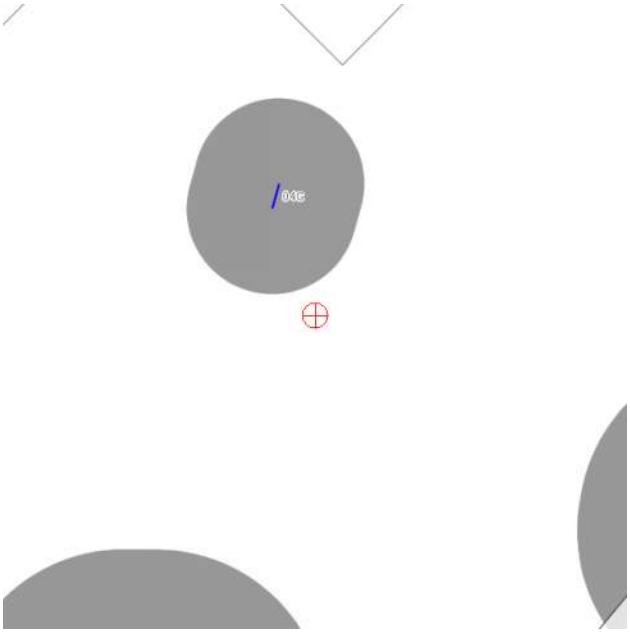
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_80
Latitude: 41-5-30.48 N
Longitude: 80-36-9.77 W
Elevation: 1064 feet
Structure Height: 111 feet

Study Type: Catenary

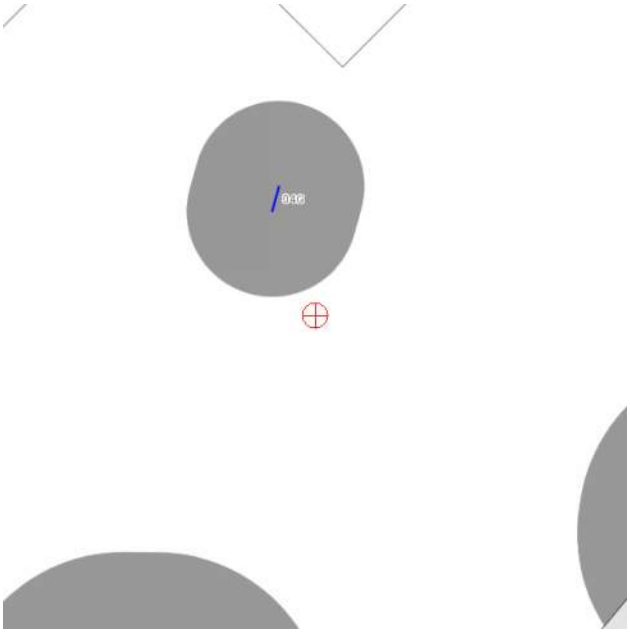
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_81
Latitude: 41-5-33.58 N
Longitude: 80-36-9.8 W
Elevation: 1057 feet
Structure Height: 111 feet

Study Type: Catenary

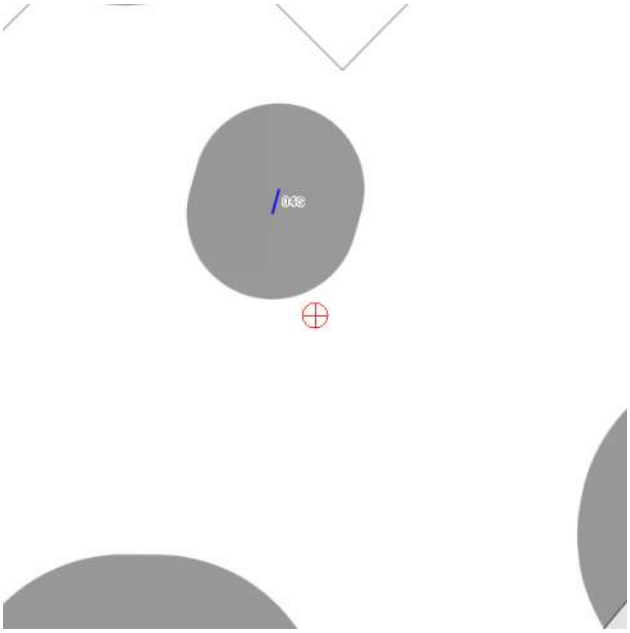
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_82
Latitude: 41-5-36.43 N
Longitude: 80-36-9.84 W
Elevation: 1055 feet
Structure Height: 111 feet

Study Type: Catenary

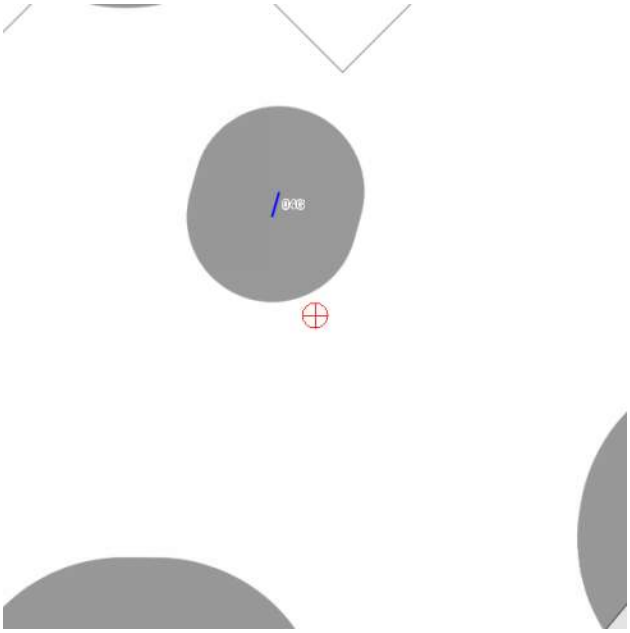
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_83
Latitude: 41-5-39.71 N
Longitude: 80-36-9.88 W
Elevation: 1034 feet
Structure Height: 120 feet

Study Type: Catenary

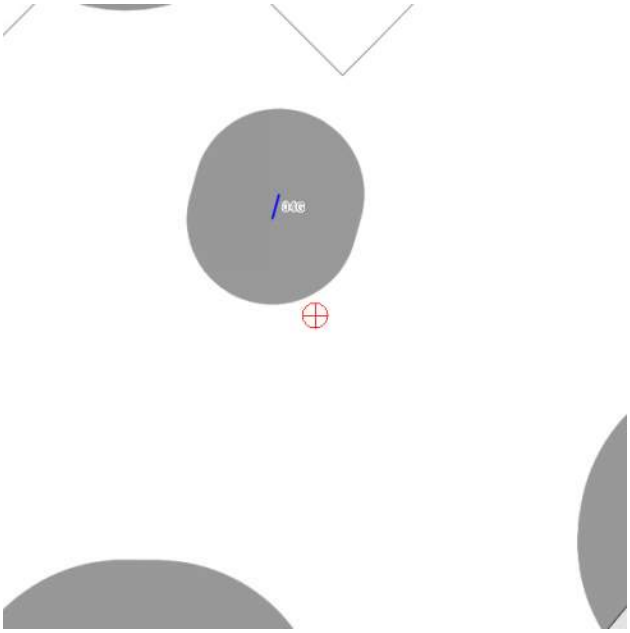
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_84
Latitude: 41-5-42.59 N
Longitude: 80-36-9.91 W
Elevation: 1041 feet
Structure Height: 115 feet

Study Type: Catenary

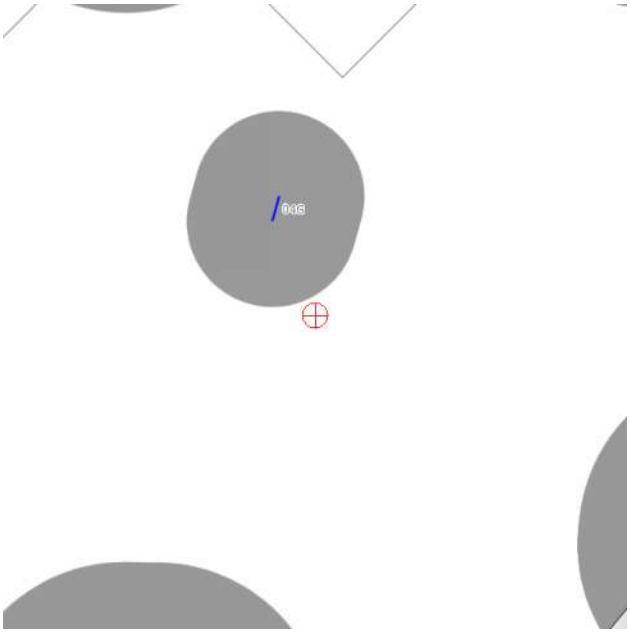
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_85
Latitude: 41-5-45.32 N
Longitude: 80-36-9.96 W
Elevation: 1052 feet
Structure Height: 106 feet

Study Type: Catenary

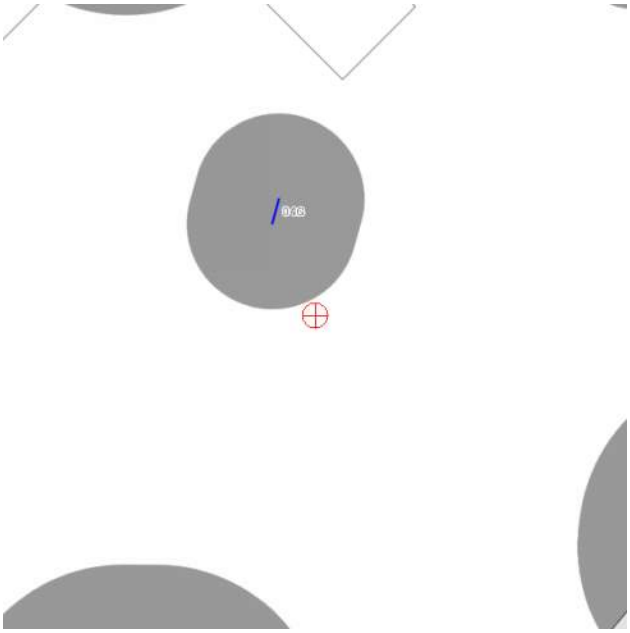
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_86
Latitude: 41-5-48.05 N
Longitude: 80-36-10.05 W
Elevation: 1053 feet
Structure Height: 106 feet

Study Type: Catenary

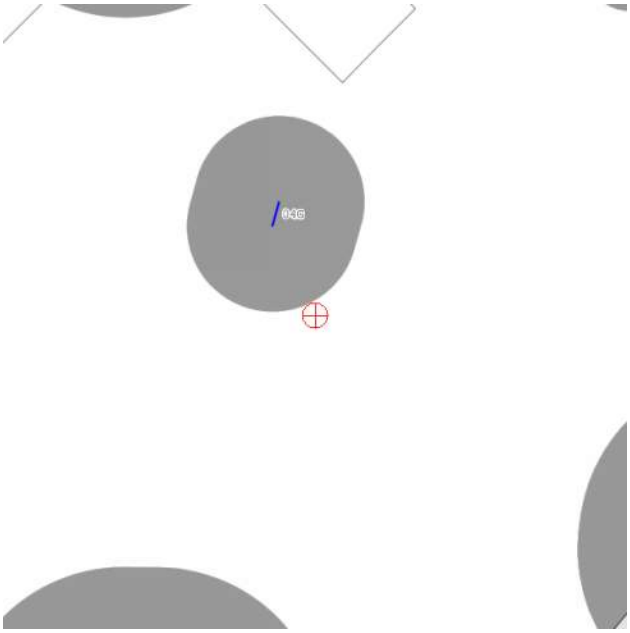
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_87
Latitude: 41-5-50.89 N
Longitude: 80-36-10.13 W
Elevation: 1058 feet
Structure Height: 121 feet

Study Type: Catenary

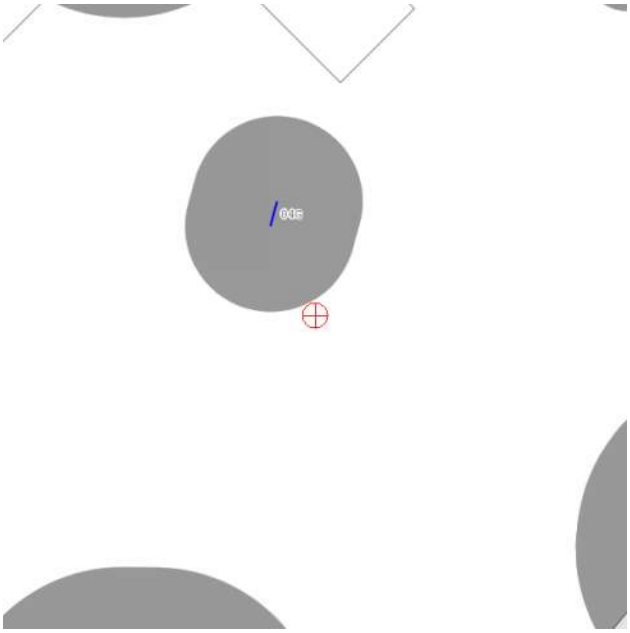
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_88
Latitude: 41-5-51.07 N
Longitude: 80-36-7.38 W
Elevation: 1062 feet
Structure Height: 101 feet

Study Type: Catenary

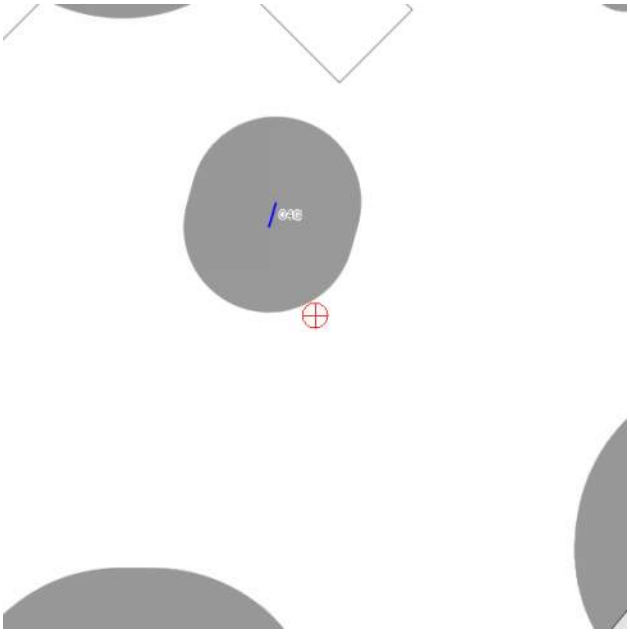
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_89
Latitude: 41-5-51.75 N
Longitude: 80-36-5.12 W
Elevation: 1067 feet
Structure Height: 86 feet

Study Type: Catenary

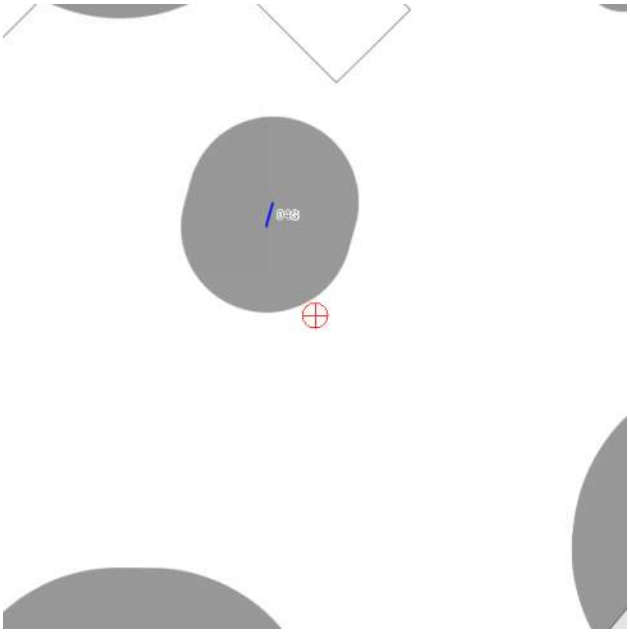
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_90
Latitude: 41-5-51.76 N
Longitude: 80-36-1.19 W
Elevation: 1078 feet
Structure Height: 76 feet

Study Type: Catenary

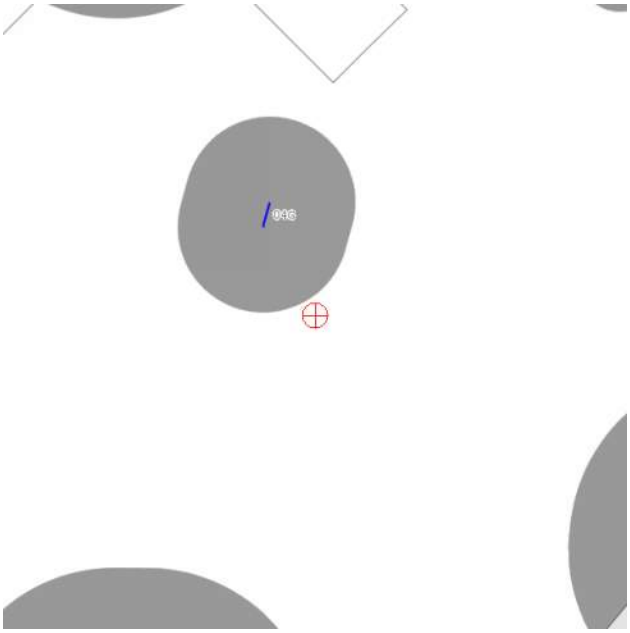
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_91
Latitude: 41-5-51.78 N
Longitude: 80-35-56.11 W
Elevation: 1074 feet
Structure Height: 80 feet

Study Type: Catenary

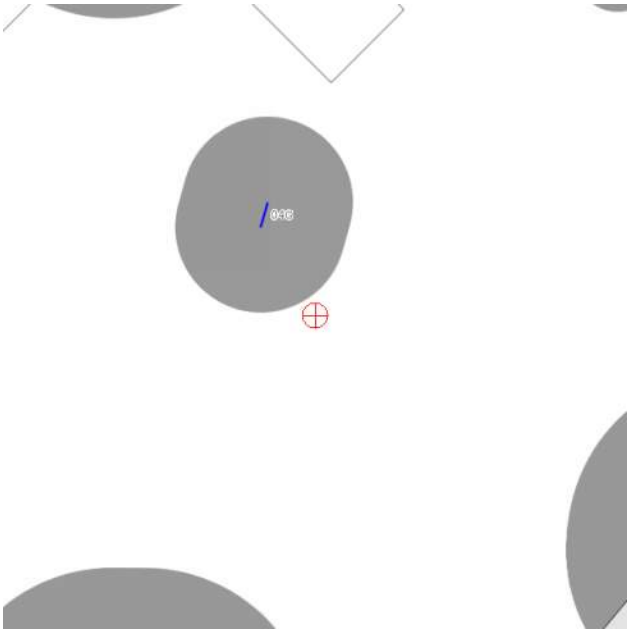
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_92
Latitude: 41-5-51.8 N
Longitude: 80-35-52.32 W
Elevation: 1078 feet
Structure Height: 85 feet

Study Type: Catenary

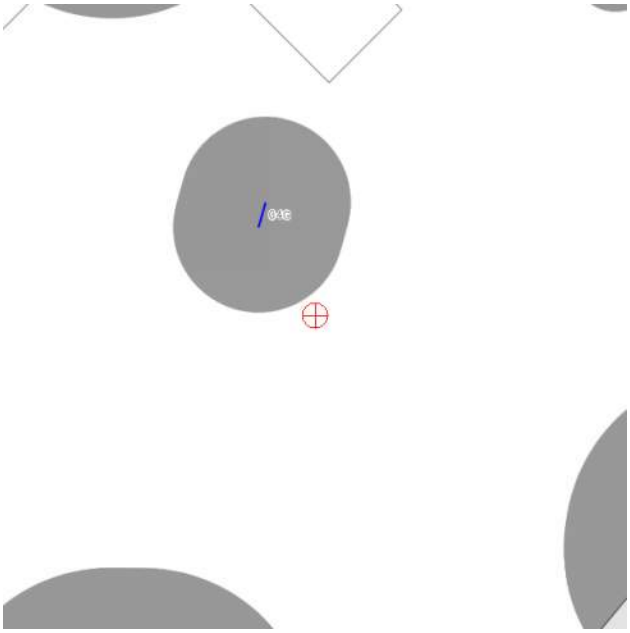
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_93
Latitude: 41-5-51.81 N
Longitude: 80-35-49.06 W
Elevation: 1084 feet
Structure Height: 88 feet

Study Type: Catenary

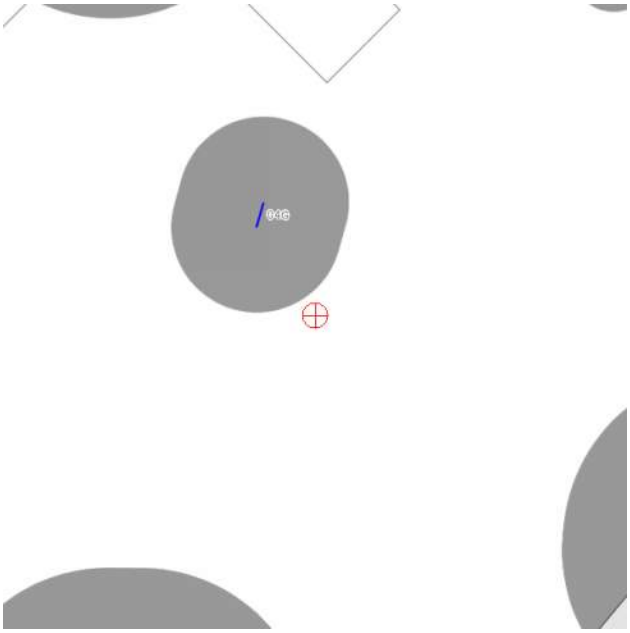
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_94
Latitude: 41-5-51.82 N
Longitude: 80-35-46.19 W
Elevation: 1082 feet
Structure Height: 121 feet

Study Type: Catenary

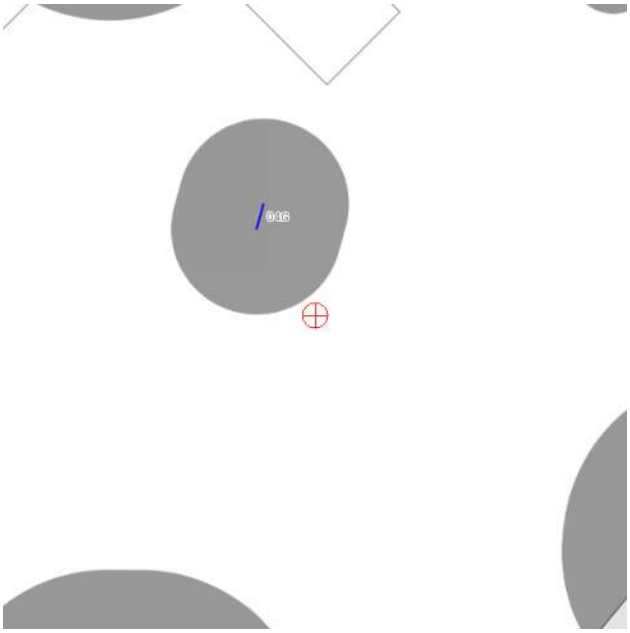
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_95
Latitude: 41-5-54.13 N
Longitude: 80-35-46 W
Elevation: 1081 feet
Structure Height: 88 feet

Study Type: Catenary

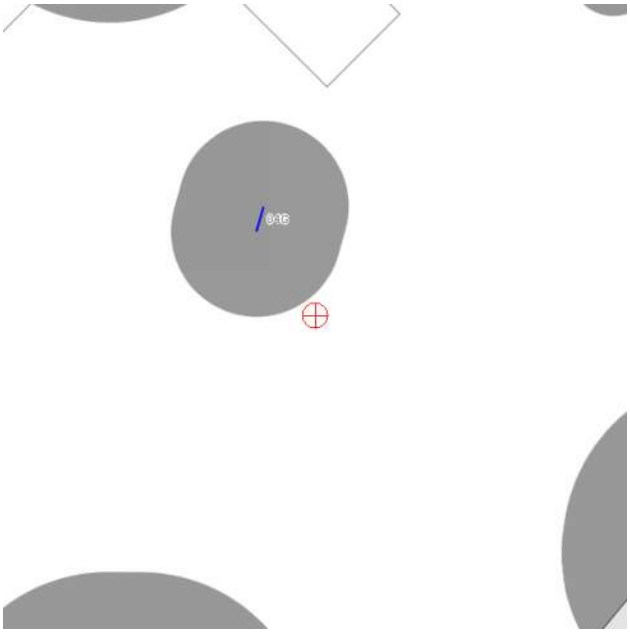
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_96
Latitude: 41-5-56.73 N
Longitude: 80-35-45.78 W
Elevation: 1079 feet
Structure Height: 70 feet

Study Type: Catenary

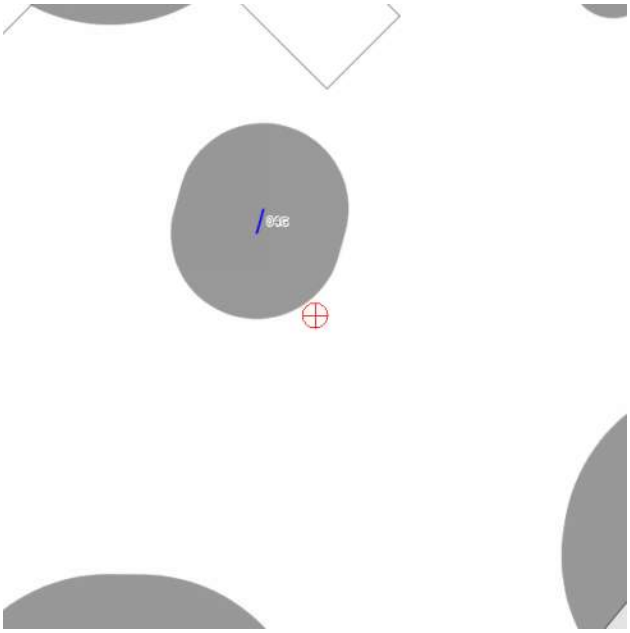
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_97
Latitude: 41-5-59.27 N
Longitude: 80-35-45.57 W
Elevation: 1079 feet
Structure Height: 66 feet

Study Type: Catenary

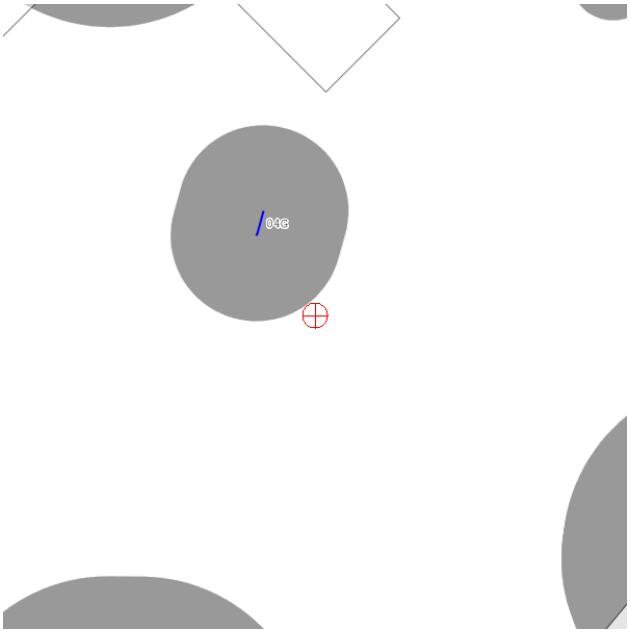
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_98
Latitude: 41-6-1.8 N
Longitude: 80-35-45.36 W
Elevation: 1080 feet
Structure Height: 70 feet

Study Type: Catenary

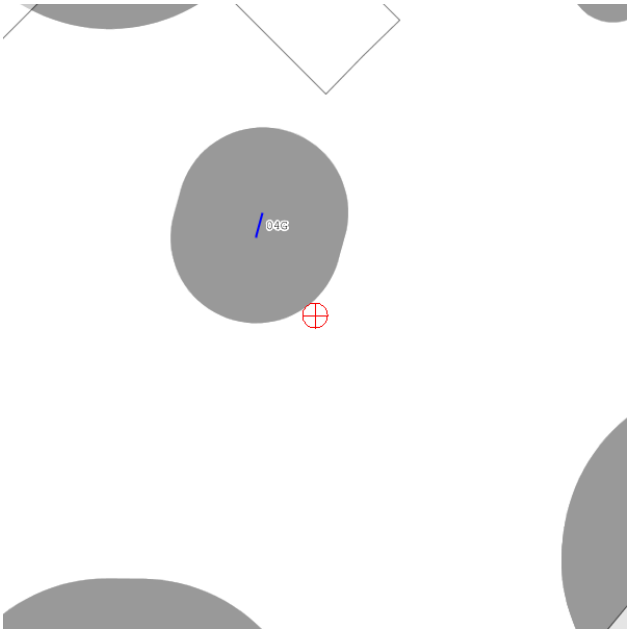
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_99
Latitude: 41-6-4.19 N
Longitude: 80-35-45.16 W
Elevation: 1083 feet
Structure Height: 71 feet

Study Type: Catenary

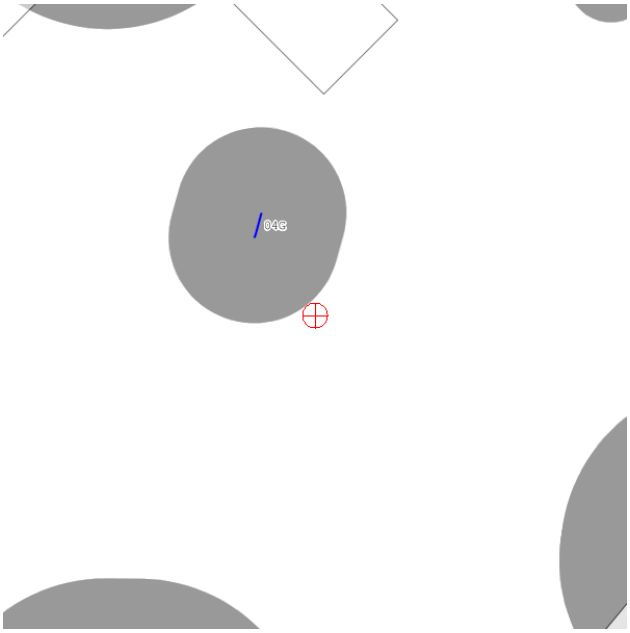
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_100
Latitude: 41-6-4.18 N
Longitude: 80-35-42.18 W
Elevation: 1089 feet
Structure Height: 66 feet

Study Type: Catenary

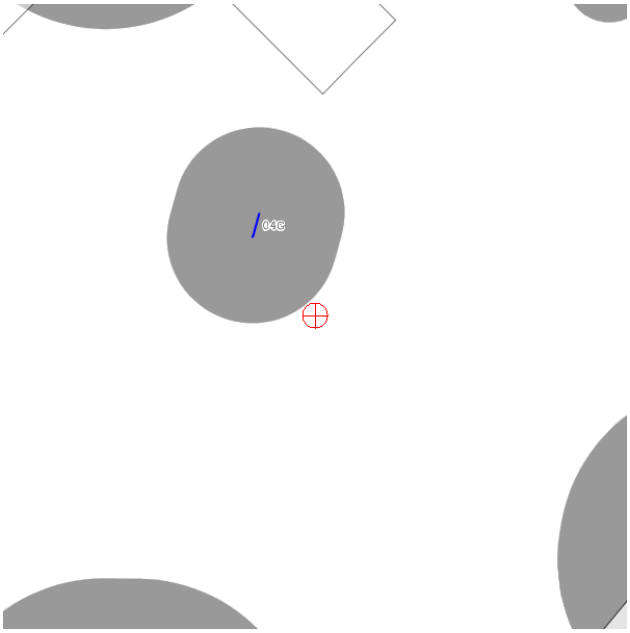
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_101
Latitude: 41-6-4.18 N
Longitude: 80-35-39.52 W
Elevation: 1089 feet
Structure Height: 71 feet

Study Type: Catenary

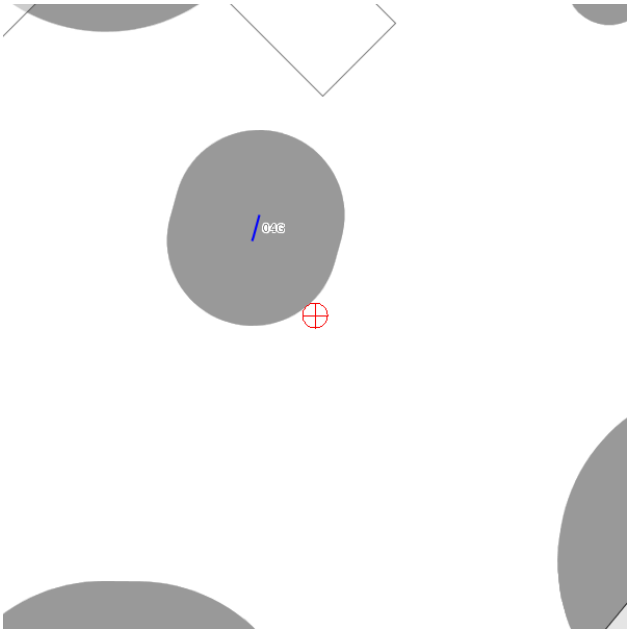
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_102
Latitude: 41-6-7.23 N
Longitude: 80-35-39.53 W
Elevation: 1090 feet
Structure Height: 70 feet

Study Type: Catenary

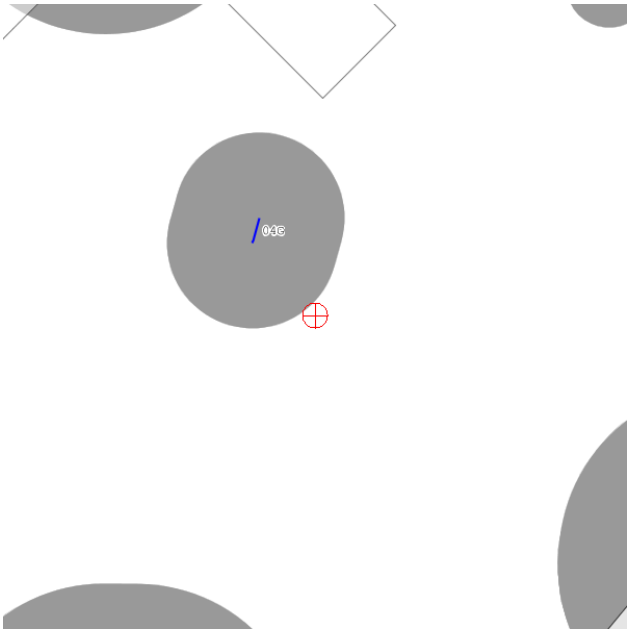
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_103
Latitude: 41-6-10.15 N
Longitude: 80-35-39.53 W
Elevation: 1088 feet
Structure Height: 71 feet

Study Type: Catenary

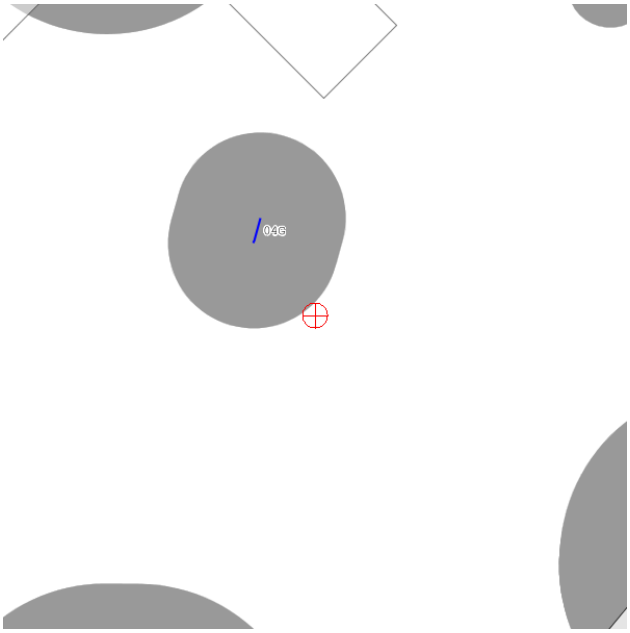
FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Structure: 149673_104
Latitude: 41-6-10.15 N
Longitude: 80-35-41.29 W
Elevation: 1086 feet
Structure Height: 71 feet

Study Type: Catenary

FAA Notice Criteria Tool Result:
You do not exceed Notice Criteria.



Miller, Brian

From: Thomas.Brett@dot.ohio.gov
Sent: Thursday, May 9, 2024 8:55 AM
To: Miller, Brian; Denyse.Click@dot.ohio.gov
Cc: Humphrys, Scott M
Subject: RE: ODOT / FE Permit Application #23-22760 - Youngstown

Follow Up Flag: Follow up
Flag Status: Flagged

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Report Suspicious

Brian,

ODOT has no objection to the proposed route for work to be completed as part of the Riverbend-Lincoln Park Transmission Line Project involving work in the IR-680 right of way between South Ave. and Market Street as described
on the map and plan submitted for ODOT right of way permit application 23-22760 which is under review at this time.

Please let me know if I can be of additional assistance.

Tom Brett
ODOT District 4
Permit Coordinator

Department of Transportation

From: Miller, Brian <brian.miller1@aecom.com>
Sent: Monday, May 6, 2024 2:19 PM
To: Click, Denyse <Denyse.Click@dot.ohio.gov>; Brett, Thomas <Thomas.Brett@dot.ohio.gov>
Cc: Humphrys, Scott M <shumphrys@firstenergycorp.com>
Subject: RE: ODOT / FE Permit Application #23-22760 - Youngstown

Hi Denyse and Thomas,

I wanted to follow up from our previous call on April 25 to thank you again for your availability and support. It was greatly appreciated!

Also, I wanted to follow up with our discussion as I believe you were going to confirm if you are able to publish a comment for approval of the general route location within the ODOT permitting system. Is that possible?

Thanks again,

Brian J. Miller
Project Manager / Senior Ecologist

M +1-412-667-9172
brian.miller1@aecom.com

AECOM
707 Grant Street
5th Floor
Pittsburgh, PA
aecom.com

NOTE: Upcoming Time Off
April 9th; April 16th, April 18th, and April 19th.
June TBD

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-----Original Appointment-----
From: Miller, Brian
Sent: Wednesday, April 24, 2024 7:40 AM
To: Miller, Brian; denyse.click@dot.ohio.gov; thomas.brett@dot.ohio.gov
Cc: Armstrong, Bradley; Humphrys, Scott M; Janis, Tracey J; Ruggiero, Augustine (Henslee, Dianna L); Barman, Nicholas J; Baker, Robert T (Tyler); Rhoades, Troy K.; jpollard@burnsmcd.com
Subject: ODOT / FE Permit Application #23-22760 - Youngstown
When: Thursday, April 25, 2024 9:00 AM-9:30 AM (UTC-05:00) Eastern Time (US & Canada).
Where: Microsoft Teams Meeting

Denyse/Thomas,

Thank you for providing your availability to discuss the components of this Project per coordination with Brad Armstrong regarding Permit Application #23-22760.

Thank you,

Brian J. Miller
Project Manager / Senior Ecologist

M +1-412-667-9172
brian.miller1@aecom.com

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4906-4-08 HEALTH AND SAFETY, LAND USE, AND REGIONAL DEVELOPMENT

(A) Health and Safety

(A)(1)(a): The construction, operation, and maintenance of the Project will comply with the requirements of applicable state and federal statutes and regulations related to safety, including requirements specified in the NERC Mandatory Reliability Standards and the National Electrical Safety Code (NESC) as well as those adopted by PUCO. Applicant will also comply with applicable safety standards established by the Occupational Safety and Health Administration (OSHA).

(A)(1)(b)-(g): This requirement is inapplicable for the construction of an electric transmission line.

(A)(2): This requirement is inapplicable for the construction of an electric transmission line.

(A)(3)(a)(i): Blasting will not be necessary during construction of the Project.

(A)(3)(a)(ii): Applicant expects that excavation and earth moving will be limited to the direct embedment of wood pole equivalent steel poles and concrete foundations for self-supporting steel structures. A vehicle-mounted auger will be used to bore holes and each wood pole equivalent steel pole will be direct embedded in an approximately 3 ¾ -foot diameter hole, 20 feet deep. For steel structures with concrete foundations, an excavator will dig a circular area approximately 10 feet in diameter and approximately 35 feet deep for the concrete foundation. This activity will result in a temporary increase in noise in the vicinity of the Project. Construction activity will generally be limited to daylight hours and will conform to OSHA noise standards. Thus, noise effects are anticipated to be localized, minimal and of short duration.

(A)(3)(a)(iii): No driving of piles, rock breaking or hammering, or horizontal directional drilling is anticipated during construction of the Project.

(A)(3)(a)(iv): Pole structures will be installed by vehicle-mounted cranes or equivalent equipment. Self- supporting steel poles will require delivery of concrete for foundation construction, including excavation work for the foundation. The noise associated with these activities will be localized, temporary and generally not louder than the noise generated by earth moving equipment.

(A)(3)(a)(v): An increase in truck traffic is anticipated during the construction of the Project for equipment access and equipment delivery. No other additional traffic is anticipated for the Project beyond infrequent, ongoing maintenance.

(A)(3)(a)(vi): The equipment will be installed using standard practices and equipment. The noise associated with this activity will be localized, temporary and generally no louder than the noise generated by earth moving equipment.

(A)(3)(b)-(e): This requirement is inapplicable because the Project will not generate any noise as a result of operation.

(A)(4)(a)-(d): This requirement is inapplicable because the Project will not require aquatic discharges and no water or water-borne wastes will flow through the facility.

(A)(4)(e): The Project will be constructed outside of identified floodplains and any resultant flooding should have no impact.

(A)(5)(a): The Proposed Route falls within portions of the Allegheny and Pottsville Groups (undifferentiated) and the Logan and Cuyahoga Formations (undivided) of the Appalachian Plateau physiographic province. The underlying geology of the route consists of either Mississippian-age (Upper and Lower) shale, siltstone, sandstone, conglomerate and limestone or Pennsylvanian-age (Middle and Lower) shale, siltstone, sandstone, conglomerate, limestone, underclay, coal, and flint. Approximately 49 percent of the area within 1,000 feet of the Proposed Route occurs within the Maxville Limestone; Rushville, Logan and Cuyahoga Formations, and 51 percent within the Allegheny and Pottsville, Undivided Formation (USGS, 2005)[1].

Based on the bedrock materials present within the Project site and Karst topography from the ODNR, Division of Geological Survey, no karst features are located within 0.25 miles of the Project area. Additionally, no subsurface mining activities were identified within the Proposed Route. The closest abandoned mine is located approximately 0.2 miles from the Project area. As karst related features and underground voids associated with abandoned mines are not located within the Project area, the Project is not likely to impact these features.

To further understand the geologic features within the range of the Project, ATSI investigated potential underlying aquifers and water wells within the Project area to identify the potential geological impact to the hydrologic system. Based on the ODNR Ohio Geology Interactive Map, the Project area is located within the Mahoning Alluvial Aquifer, Mahoning Buried Valley Aquifer, and the Alliance Thin Upland Aquifer. The vulnerability of groundwater was examined for these aquifers utilizing the ODNR Groundwater Vulnerability Index and identified the ratings ranged from 100-119; 120-139; 140-159; and 160-179. The majority of the Preferred ROW occurs in an area of moderate vulnerability (100 – 139). The areas identified with the moderate groundwater vulnerability index are located within highly urbanized or previously impacted areas from industrial or commercial development, which suggests these areas are currently impacted from these activities. As the footprint of subsurface disturbance for transmission line activities are minor compared to these developments, and because ATSI will implement erosion and sediment control plans, it is not anticipated that the Project within this area would change the existing conditions of the groundwater vulnerability and impact aquifers.

Additionally, a review of the ODNR Ohio Water Well Interactive Database indicates there are numerous groundwater wells located within proximity of the Project area of the Proposed route. However, only one well was identified within the Proposed Route ROW, at a depth of approximately 52 feet. As subsurface activities for transmission lines are limited to construction of the structures, impacts to the wells are not likely anticipated for either of the routes, due to (1) avoidance of structures being place on the wells and/or (2) the depths of the wells are significantly below the threshold of disturbance. For these reasons, impacts to existing water wells are not

[1] U.S. Geological Survey. 2005. Preliminary integrated Geologic Map Databases for the United States: Kentucky, Ohio, Tennessee, and West Virginia. U.S. Geological Survey Open-File Report. Available at http://pubs.usgs.gov/of/2005/1324. Access on July 24, 2025.

anticipated for the Project (ODNR, 2025)[1].

Based on the ODNR's Oil & Gas Well Locator, only one injection well was identified within 0.25 miles of the Proposed route. However, no wells were identified within the Project ROW.

A figure displaying the location of these geological features presented in this section is provided as **Figure 8-1**.

(A)(5)(b): Seven soils with slopes exceeding 12 percent were identified within 1,000 feet of the Proposed Route, based on data obtained from the U.S. Department of Agriculture, Natural Resource Conservation Service (NRCS, 2025)[2]. These soils account for three percent of the Proposed Route ROW. No poles are expected to be within areas with slopes exceeding 12 percent for the Proposed route. Erosion and sediment controls will be placed in accordance with BMPs on slopes exceeding 12 percent where construction will occur. The location of the soils identified with slopes greater than 12 percent are also shown on **Figure 8-1**.

(A)(5)(c): The bedrock geologies consisting primarily of siltstone, mudstone, and sandstone and overlaying soils consisting of primarily silt loams and disturbed urban soils, present along both routes, are generally expected to be suitable for foundation construction. If deemed necessary to obtain further site-specific details on the suitability of the soils for foundation construction, ATSI will conduct soil tests using a drop hammer to drive a sampler tube. Soil bearing capacity is tested by the number of blows required to drive the tube 12 inches into the ground. Soil samples taken with a split-spoon at 5-foot intervals will be used to determine soil type. Typically, the testing will be performed to a depth of between 20 to 40 feet. If rock is encountered, a carbide-tipped bit will be used to drill an exploratory boring 5 to 10 feet into the rock (NRCS, 2025)[2].

(A)(5)(d): Soil and/or rock tests will be performed along the final approved route in areas where foundations for poles are necessary based on final engineering design. In those locations where steel structures on concrete foundations may be necessary, geotechnical soil testing using truck-mounted drilling equipment may be utilized. These locations will be identified during the detailed engineering design phase of the Project, which will occur contemporaneously with the OPSB's review of the Application. A professional geotechnical contractor will be retained to coordinate and conduct the geotechnical investigation with ATSI oversight. If suitable access is available, truck-mounted drilling equipment will be utilized. Soil tests will be performed using a drop hammer to drive a sampler tube. Soil bearing capacity is tested by the number of blows required to drive the tube 12 inches into the ground. Soil samples taken with a split-spoon at 5-foot intervals will be used to determine soil type. Typically, the testing will be performed to a depth of between 20 to 40 feet. If rock is encountered, a carbide-tipped bit will be used to drill an exploratory boring 5 to 10 feet into the rock. Once the geotechnical investigation is complete, recovered soil samples will be evaluated in a laboratory to determine soil characteristics, which are then used for foundation analysis and design using an industry standard software program, Foundation Analysis

[1] ODNR Water Wells Database. Retrieved July 21, 2025, from https://geo.epa.ohio.gov/portal/home/item.html?id=fff0f201e0e14a37a36d1cb8b5d42926

[2] NRCS. 2025. Web Soil Survey. Soil surveys for Soil surveys for Mahoning County, Ohio. U.S. Department of Agriculture. Available online at http://websoilsurvey.nrcs.usda.gov. Accessed July 22, 2025.

and Design Tools, released by the Electric Power Research Institute (EPRI).

(A)(5)(e): The Applicant submitted an Environmental Review and Natural Heritage Database request and received a response from the ODNR on August 21, 2025 (see **Appendix 8-1**). The ODNR letter states that 16 oil and gas wells exist within a 1-mile buffer of the Project. However, no oil or gas wells exist within the project boundary. Additionally, ODNR has record of five abandoned underground mines within one mile of the project; with the nearest being 0.4 miles south of the project area. Also, several small earthquakes have historically been recorded near the site. Overall, ODNR did not identify any major concerns regarding the geological suitability of the project.

(A)(6): This requirement is inapplicable because the Project is a transmission line.

(A)(7): This requirement is inapplicable because the Project is a transmission line.

(A)(8): This requirement is inapplicable because the Project is a transmission line.

(A)(9): This requirement is inapplicable because the Project is a transmission line.

(A)(10): No radio or television interference (TVI) is expected to occur from the operation of the proposed transmission line along the Proposed Route. During the operation of transmission lines, gas type discharges (corona) could result in either radio frequency interference (RFI) noise and TVI noise under certain conditions. However, large corona levels are typically not encountered at 138 kV so these types of interference do not generally occur. Consequently, for this Project the potential for radio or TVI is very low.

Further, although radio frequency noise level of the transmission line during heavy rain is greater than the fair-weather noise level, the quality of radio reception under typical heavy rain conditions is affected more by atmospheric conditions than by operation of transmission lines. Therefore, the construction of the Project is not expected to increase radio frequency noise levels.

Finally, the gas-type (corona) discharges that can produce RFI and TVI are typically localized effects, resulting primarily from defective hardware (ball and socket hardware in insulators, hardware-to-hardware, line to hardware, etc.) and may be easily and quickly detected. Once detected, the hardware will be repaired or replaced, thus eliminating the interference source.

(A)(11) No radar interference is expected to occur from the operation of the proposed transmission line along the Proposed Route.

(A)(12): The height of the tallest anticipated aboveground structure and construction equipment is expected to be approximately 150 feet. The nearest airport is located in Mahoning County (a private airport), approximately 2.2 miles north of the proposed transmission line. Two helipads associated with hospitals are located within one mile north of the Project near downtown Youngstown.

The FAA Form 7460-1, "Notice of Proposed Construction or Alteration," is used for FAA notification. This can be filed electronically or by standard U.S. Mail.

A 7.5-minute quadrangle topographic map showing the proposed construction must be attached to

the completed Form 7460-1. The Form 7460-1 must be submitted 45 days prior to the proposed start of construction.

Additionally, a permit from the ODOT, Office of Aviation, must be obtained prior to the start of any construction on or near airports in Ohio that are open to the public. A duplicate of the federal filing fulfills the state permit application requirements as set forth in Ohio Administrative Code (OAC) 5501:1-10-06.

Filing Criteria

The FAA Form 7460-1 must be filed for any construction or alteration of more than 200 feet in height. Additionally, any construction or alteration extending outward and upward in excess of one of the following slopes requires filing:

- 100 to 1 slope for a horizontal distance of 20,000 feet from the nearest public use runway greater than 3,200 feet in length, excluding heliports
- 50 to 1 slope for a horizontal distance of 10,000 feet from the nearest public use runway less than 3,200 feet in length, excluding heliports
- 25 to 1 slope for a horizontal distance of 5,000 feet from the nearest landing and takeoff area of a public use heliport

Based on preliminary engineering, ATSI submitted the proposed structure locations and heights to the Federal Aviation Administration (FAA) Notice Criteria Tool for Obstruction Evaluation/Airport Airspace Analysis. The FAA Notice Criteria Tool made a determination that no structures exceed the notice criteria, therefore, no structures require filing with the FAA. The results of the FAA Notice Criteria Tool can be found in **Appendix 7-1**. Upon completion of the final design, ATSI will review the need for any permitting with the FAA and will follow recommendations made by the FAA.

(A)(13): No interference with microwave communication paths and systems is expected to occur with the operation of the proposed transmission line along the Proposed Route.

(A)(14): The following calculations, included in **Table 8-2,** provide an approximation of the magnetic and electric fields strengths of the proposed 138 kV transmission line at various locations associated with the Project. The calculations provide an approximation of the electric and magnetic field (EMF) levels based on specific assumptions utilizing the EPRI EMF Workstation 2015 program software.

Factors that affect the level of magnetic and electric fields that are considered in the modeling include variance in the daily and projected long-term transmission line loading, operating voltage, contingency operations, phase configuration, direction of current flows, conductor sag, ground elevation, unbalance conditions, and other nearby magnetic field sources or conductors of neutral current including water mains, metallic fences, and railroad tracks. Electric field computations used for this modeling also assume that shrubs, trees, buildings, and other objects are not in close proximity to the facilities, as they produce significant shielding effects. Finally, other transmission or distribution facilities near the transmission line will also affect the calculated fields. For

example, a double-circuit loop configuration, with current flows in opposite directions, results in a partial reduction (cancellation) of the magnetic field levels.

(A)(14)(a): The model and calculations used in this Application also include the following assumptions:

- Current flows are assumed in the direction expected under normal system operating conditions.
- The location of transmission line poles, attached conductors and static wire, and line phasing are based on preliminary engineering layouts.
- The calculated field levels assume a reference point approximately 3 feet (1 meter) above ground.

Using these assumptions, three loading conditions were modeled for the proposed transmission line: 1) the winter normal conductor rating, 2) emergency line loading, and 3) normal maximum loading. The winter normal conductor rating represents the maximum current flow that the conductor can withstand during winter conditions. It is not anticipated that the transmission line would be operated at the winter normal conductor rating level of current flow. The emergency maximum loading represents the maximum current flow in the transmission line under unusual circumstances and only for a short period of times. The normal maximum loading represents the routine maximum loading that the transmission line would be operated. Daily current load levels would fluctuate below this level.

The transmission line loadings used in the calculations are presented in **Table 8-1**. The conductor configurations and ROW width are the same over the entire length of the Preferred Route. Field strengths were modeled for all configurations under consideration for the portions of both routes that would be within 100 feet of a residential structure or would occupy more than 10% of the respective route.

Table 8-1
Transmission Line Loadings

Line Name	Winter Conductor Rating (Amps)	Emergency Loading (Amps)	Normal Loading (Amps)
Lincoln Park-Riverbend 138 kV Transmission Line (Proposed)	1678	1417	47.6

One conductor configuration, the typical tangent to tangent (Figure 5-1A) configuration, is present within 100 feet of an occupied residence. The calculated EMFs for this configuration are shown in **Table 8-2**.

Table 8-2
EMF Calculations for a Typical Tangent to Tangent Span Configuration on the Lincoln Park- Riverbend 138 kV Transmission Line Project Proposed Route

Line EMF Calculations		Electric Field (kV/meter)	Magnetic Field (mGauss)
Normal Loading	Under Lowest Conductors	0.295	1.36
	At Right-of-Way Edge	0.22 / 0.28	1.12 / 1.16
Emergency Loading	Under Lowest Conductors	0.295	40.76
	At Right-of-Way Edge	0.22 / 0.28	32.43 / 35.70
Winter Rating	Under Lowest Conductors	0.295	47.79
	At Right-of-Way Edge	0.22 / 0.28	39.31 / 40.98

Typical cross section profiles of the normal calculated electric fields and magnetic fields at normal loading, emergency loading and winter conductor rating for all scenarios considered are shown in **Appendix 8-2**.

(A)(14)(b): EMFs are naturally occurring in the environment and can be found in the Earth's interior and in the human body. They are generated essentially anywhere where there is a flow of electricity, including electrical appliances and power equipment. Electric fields are associated with the voltage of the source; magnetic fields are associated with the flow of current in a wire. The strength of these fields decreases rapidly with distance from the source. EMFs associated with electricity use are not disruptive to cells like x-rays or ultraviolet rays from the sun. EMF fields are thought to be too weak to break molecules or chemical bonds in cells. Scientists have conducted extensive research over the past several decades to determine whether EMFs are associated with adverse health effects; at this time there is no firm basis to conclude that EMFs from transmission lines cause adverse health effects. A number of independent scientific panels have reviewed the research and have stated that there is no basis to conclude that EMFs cause adverse health effects, nor has it been shown that levels in everyday life are harmful.

As part of the National Energy Policy Act of 1992, the Electric and Magnetic Fields Research and Public Information Dissemination (EMF RAPID) program was initiated within the 5-year effort under the National EMF Research Program. The culmination of this 5-year effort was a final RAPID Working Group report, which was released for public review in August 1998. The Director of the National Institutes of Environmental Health Sciences (NIEHS) then prepared a final report to Congress after receiving public comments. The NIEHS' Director's final report, released to Congress on May 4, 1999, concluded that extremely low frequency electric and magnetic fields (ELF-EMF) exposure cannot be recognized at this time as entirely safe because of weak scientific evidence that exposure may pose a leukemia hazard. The Director further stated that the conclusion of this report is insufficient to warrant aggressive regulatory concern.

The following websites sponsored by federal agencies or other organizations provide additional information on the current state of knowledge regarding EMF:

- Centers for Disease Control/National Institute for Occupational Safety and Health: http://www.cdc.gov/niosh/topics/emf/
- NIEHS: http://www.niehs.nih.gov/health/topics/agents/emf/

(A)(14)(c): To minimize the EMFs associated with the construction of the Project, ATSI uses design considerations to reduce the strength of EMFs. For instance, the strength of EMFs can potentially be reduced by installing the transmission line conductors in a compact configuration.

For this Project, ATSI plans to complete final engineering of the facilities according to the requirements of the NESC. The pole heights and compact conductor configuration were chosen based on NESC specifications, engineering parameters, and cost, which should help minimize EMF strength.

(A)(14)(d): Information on EMF was available at the PIMs held for the Project on June 12, 2024 and June 4, 2025. This information included a discussion of basic information on electric magnetic field theory, scientific research activities and EMF levels in everyday life. **Appendix 6-2** contains copies of this information. Similar materials will be available upon request to persons along the Project routes.

(B) ECOLOGICAL RESOURCES

(B)(1)(a)(i): A map at a scale of 1:24,000 (1 inch = 2,000 feet) including the corridor 1,000 feet either side of the centerline (referred to as the 2,000-foot corridor) of the Proposed Route is presented as **Figure 8-2**. This map depicts the transmission line alignments, substation location, and land use classifications, including vegetative cover. Features within 1,000 feet of the proposed route were identified from published data and, where accessible, verified by the field ecological survey. **Figure 8-3** displays the generalized land use and zoning identified along the Proposed and alternative route.

A map at a scale of 1:2,400 scale depicting field-delineated water features, lakes, ponds, reservoirs, highly erodible soils and slopes of 12 percent or greater, wildlife areas, nature preserves, and conservation areas are provided as **Figure 8-4**.

Based on Mahoning County Zoning information, land use in the Project Area consists of commercial, government/public owned/open space, industrial, and residential. In addition, there are road, railroad and utility ROWs present in the Project area with limited recreational and agricultural land uses. A summary of the land use crossed by the Proposed Route for the Project is provided in **Table 8-3**.

Table 8-3
Proposed Route Land Use Types

Land Use Type	Length of Route (feet)	Length of Route (miles)	Area within ROW (Acres)
Government or Public Owned or Open Space	4,082.1	0.8	5.6
Industrial	14,110.6	2.7	20.1
Residential	5,443.3	1.0	8.2
None Identified Zone Parcel Areas (Public Roadways, Waterways, etc.)	9,240	1.75	15.3

Note. This table is based on Mahoning County Zoning data and does not count existing transportation ROWs or the Mahoning River.

(B)(1)(a)(ii): No underground mining activities or surface mining operations are within the ROW of the Proposed route. This section is not applicable.

(B)(1)(a)(iii): There are no wildlife areas, nature preserves, or other conservation areas within the Project area. However, Youngstown Foundation Amphitheater (including Wean Park and the Covelli Center properties) as well as Lincoln Park are located within range of the Project area but not crossed by the Proposed Route.

(B)(1)(a)(iv): Based on National Hydrography Dataset and National Wetlands Inventory (NWI) mapped wetlands, the Proposed Route was preliminary desktop reviewed for the presence of wetlands, streams, ponds, and other bodies of water within their proposed ROW. A total of 4 stream crossings and 0.83 acres of wetlands were identified within the ROW. Following the review of the desktop resources within the area, additional field surveys were completed to verify the locations and presence of wetlands and other waterbodies within the Proposed Route as further detailed throughout this section.

(B)(1)(a)(v): The Project area gently slopes towards the Mahoning River and has seven soils with slopes exceeding 12 percent, based on data obtained from the U.S. Department of Agriculture, NRCS, and these slopes were identified within 1,000 feet of the Proposed Route. These soils account for less than three percent within the Proposed ROW (NRCS, 2025)[1]. No poles are expected to be within areas with slopes exceeding 12 percent for the Proposed Route. Erosion and sediment controls will be placed in accordance with BMPs on slopes exceeding 12 percent where construction will occur.

(B)(1)(a)(vi): The proposed vegetative clearing by the Project is shown in **Table 8-4**.

[1] NRCS. 2025. Web Soil Survey. Soil surveys for Soil surveys for Mahoning County, Ohio. U.S. Department of Agriculture. Available online at http://websoilsurvey.nrcs.usda.gov. Accessed July 22, 2025.

Table 8-4
Proposed Route Vegetative Communities

Vegetative Communities	Length of Route (in feet)	Length of Route (in miles)	Acreage within ROW
Forested	13,201.1	2.5	18.3
Landscaped/Maintained	3,228.9	0.6	4.6
Old Field/Scrub-Shrub	6,583.1	1.3	10.2
Stream/Wetlands	462.92	0.1	0.7
Urban	9,550.0	1.8	15.4

(B)(1)(a)(vii): The construction impacts on woody and herbaceous vegetation along the Proposed Route will be limited to the initial clearing of vegetation within the 65-foot ROW for the proposed transmission line and access roads. Specific locations for access roads will be identified at the time of ATSI's transmission line easement acquisition process. Trees adjacent to the proposed transmission line ROW that are dead, dying, diseased, leaning, significantly encroaching, or prone to failure, may require clearing to allow for safe operation of the transmission line. Vegetative wastes (such as tree limbs and trunks) generated during the construction phase will be windrowed or chipped and disposed of appropriately depending on individual landowner requests, and applicable permit requirements.

(B)(1)(a)(viii): Based on the coordination completed with the U.S. Fish and Wildlife Service (USFWS) and ODNR Division of Wildlife (DOW), sensitive habitats associated with the species in range of the Project include forested areas that would be utilized as summer roosting habitat for the listed bat species (Indiana bat, northern long-eared bat, tricolored bat, and little brown bat), as well as rivers or large bodies of water which could provide habitat for freshwater mussel species and listed fish species. No specific or defined critical habitat was identified by either the USFWS or ODNR as occurring within the Project ROW. ATSI anticipates adherence to seasonal clearing restrictions to avoid adverse effects upon the listed bat species. Additionally, ATSI does not plan to require in-water work to avoid impacts to the freshwater mussel and listed fish species. For these reasons, the Project is not likely to adversely affect sensitive habitat areas. Further information regarding sensitive, threatened, or endangered species is provided within the following sections.

(B)(1)(b): The ecological survey includes 441 acres encompassing the 65-foot wide ROW associated with the alternative routes (Proposed, Common, and Alternative) as well as their anticipated access roads and work areas. The survey was conducted across four years, including:

- 2020: January: 06-08, August 20, October 06, and November 03;
- 2021: March 11;

- 2022: November 15; and
- 2024: June 17, September 20, and December 12.

The field survey was preceded by review of published mapping, aerial photography, protected federal and state-listed species (e.g., threatened, or endangered), and ecological information for at least 1,000 feet on either side of the Proposed and alternate routes centerlines. Map sources included USGS 7.5-minute quadrangle topographic maps, USFWS NWI maps, and U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) soil survey maps. A copy of the wetland delineation and stream assessment report is provided as **Appendix 8-3** and a summary of the delineated features per route is provided below.

Based on the results of the field assessment, a total of 34 wetland complexes were delineated using the USACE 1987 Wetland Delineation Manual as well as the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0) [Environmental Laboratory, 1987; and 2012][1,2]. Delineated wetlands were also evaluated using the OEPA Ohio Rapid Assessment Method (ORAM; identified in **Table 2** of **Appendix 8-3)**.[3] A total of 23 wetlands were identified along the Proposed Route. Regarding streams, a total of 25 streams were identified along the Proposed Route and evaluated using the Qualitative Habitat Evaluation Index (QHEI) and Headwater Habitat Evaluation Index (HHEI) methods (identified in **Table 3** of **Appendix 8-3**).

Wetland and streams identified during the ecological survey are shown on **Figures 2 and 3** within **Appendix 8-3**. A summary table displaying the potential resource acreage, resource names, and type of resource is provided in **Table 2** and **3** of **Appendix 8-3.**

Published information regarding existing flora and fauna was requested from the ODNR-DOW Ohio Natural Heritage Program. This request included records of state-listed species within 1 mile of the Project area. The information provided by the ODNR-DOW indicated no records of federal or state threatened or endangered species, within 1,000 feet of the Preferred and Alternate Routes(ODNR-DOW, 2025a)[4]. More detail on the data provided by the ODNR-DOW is provided in Section 4906-4-08(B)(1)(e).

Vegetative communities within the field survey area include forested, landscaped/maintained, old field/scrub-shrub, stream/wetland, and urban areas. Habitat descriptions are provided below.

- **Forested**

Oak-Hickory and successional mixed hardwood woodlands are present along the Project survey corridor. Woody species dominating these areas included white oak (*Quercus alba*), swamp white oak (*Quercus bicolor*), pin oak (*Quercus palustris*), box elder (*Acer negundo*), American elm (*Ulmus americana*), shagbark hickory (*Carya ovata*), black walnut (*Juglans nigra*), red maple (*Acer rubrum*), and silver maple (*Acer saccharinum*). The dominant shrub-layer species included

[1] Environmental Laboratory. 1987. Corps of Engineers Wetland Delineation Manual. Technical Report Y-87-1. U.S. Army Corps of Engineers Waterway Experiment Station, Vicksburg, Mississippi.

[2] Environmental Laboratory. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0). ERDC/EL TR-12-9, U.S. Army Engineer Research and Development Center, Vicksburg, MS.

[3] OEPA. 2001. Ohio Rapid Assessment Method for Wetlands Version 5.0: User's Manual and Scoring. February 2001.

[4] ODNR-DOW. 2025. Ohio Natural Heritage Database Request Correspondence. March 5, 2025.

honeysuckle (*Lonicera maackii*), and blackberry (*Rubus occidentalis*).

- **Landscaped/Maintained**

Residential and commercial lawns as well as other landscaped areas, typically adjacent to roads, are crossed by the routes. Vegetation identified includes areas of grasses and other herbaceous species, such as fescue (*Festuca* spp.), common dandelion (*Taraxacum officinale*), ground ivy (*Glechoma hederacea*), English plantain (*Plantago lanceolata*), Fuller's teasel (*Dipsacus fullonum*), great plantain (*Plantago major*), white clover (*Trifolium repens*), and red clover (*Trifolium pratense*).

- **Old Field/Scrub-shrub**

Herbaceous cover exists alongside roads, field borders, and abandoned fields within the survey corridor of the Project in the form of successional old-field communities. These communities are the earliest stages of recolonization by plants following disturbance. This community type is typically short-lived, giving way progressively to shrub and forest communities unless periodically re-disturbed, in which case they remain as old fields. The old-field areas within the study corridors and adjacent areas are infrequently mowed areas of grasses, forbs, and occasional shrubs.

- **Streams/Wetlands**

Streams and wetlands were observed within and beyond the proposed ROW of the Proposed and alternate routes, as discussed in detail in other portions of this section.

- **Urban**

Urban areas are developed with residential and commercial land uses, including roads, railroads, buildings and parking lots. These areas are generally devoid of significant woody and herbaceous vegetation.

(B)(1)(c): The Project area is mostly located within the urbanized area of the City of Youngstown and follows existing roadways to minimize impacts from vegetation clearing activities within the Project area. The potential impacts on woody and herbaceous vegetation for the Project will be limited to maintenance activities along the proposed transmission line ROW and access roads for safe and reliable operation of the transmission line. Trees adjacent to the proposed route that are dead, dying, diseased, leaning, significantly encroaching, or prone to failure may require clearing to allow for safe construction and operation of the transmission line. Vegetative waste (such as tree limbs and trunks) that is generated during construction phase will be windrowed or chipped and managed appropriately. A summary of the anticipated clearing activities has been provided above in **Table 8-4**.

Due to the existing terrain and urbanized land use, grading and excavation activities will be minimal for this Project and grading activities will be limited to providing suitable surface area for construction vehicle operation. Some minor, local leveling may be necessary for designated laydown and set-up areas for construction equipment; however, any grading would be restricted to the immediate area. Areas of earth disturbance will be temporary in nature and restored to pre-construction contours to extent practicable.

Initial development of site clearing and construction areas will attempt to avoid impacts to wetland and waterbodies. Due to the linear nature of the Project, complete avoidance is not possible, and ATSI anticipates that the Project will impact some wetlands. Regarding streams, ATSI anticipates

avoiding all stream impacts by limiting the crossings to aerial span of the transmission line and/or by utilizing temporary timber mat bridges to be installed above the Ordinary High-Water Mark (OHWM). Due to the Mahoning River being listed as a Navigable Water, a Section 10 authorization will be required via PCN Nationwide Permit (NWP)-57 with the USACE for two crossings.

Regarding wetlands, only one forested wetland will be impacted by permanent fill from a structure foundation. All other wetlands crossed within the proposed ROW will be either avoided or hand-cleared of vegetation without grubbing to avoid placement of fill and/or dredge activities within these wetlands. Access roads and work areas will be adjusted to avoid wetlands to the extent practicable. If avoidance is not feasible, ATSI intends to install temporary timber matting or its equivalent within the wetlands. For temporary timber matting fills that exceed 1/10th acre of fill, ATSI will coordinate with the USACE via a PCN NWP-57, if applicable.

A summary of wetlands, streams, and other water resources within the Project area and ROW is provided within **Appendix 8-3**.

(B)(1)(d): The Project area is primarily urban with relatively high density residential, industrial, commercial, and institutional land uses. Road, railroad, and utility ROWs are present through the area. Limited recreational and agricultural land uses are also present. Both the Preferred and Alternate Routes include potential habitat for wildlife species. Lists of commercial and recreational species were created utilizing professional experience and the ODNR-DOW 2025-2026 Hunting and Trapping Regulations.[1]

Lists of protected species are based on consultation with ODNR-DOW and USFWS (**Appendix 8-1** and **8-4**, respectively). Details on the expected impacts of construction, operation, maintenance, and mitigation procedures can be found after the threatened and endangered, commercial, and recreational species descriptions that follow.

- **Protected Species**

Initial coordination letters were submitted to the ODNR-DOW and USFWS on February 13, 2025, to obtain records of state and federal listed species within a 1-mile of the preferred and alternate route. The ODNR responded on March 5, 2025 and revised response on August 21, 2025 with identification of four listed bat species, freshwater mussels, one fish, and one reptile species within range of the Project area. The USFWS provided their response on February 28, 2025, with identification of two federally listed bat species and one bat species proposed for federal listings. **Table 8-5** (below) provides a summary of potential state and federal species within range of the Project area.

For the state and federal listed bat species, both the ODNR and USFWS identified that the Project was in range of Indiana bat (*Myotis sodalist*), northern long-eared bat (*Myotis septentrionalis*), and tricolored bat (*Perimyotis subflavus*). Additionally, the ODNR also stated that the Project was within range of little brown bat (*Myotis lucifugus*). Both agencies recommend if tree clearing is required for the Project that cutting of these trees is completed between October 1 and March 31st. If clearing activities cannot adhere to the seasonal restriction, both ODNR and USFWS will require additional summer mist net surveys for the listed species. As ATSI intends to adhere to the seasonal

[1] Ohio Department of Natural Resources - Division of Wildlife. 2025. Hunting and Trapping Regulations 2025 to 2026. Available online at https://dam.assets.ohio.gov/image/upload/ohiodnr.gov/documents/wildlife/laws-regs-licenses/Ohio%20Hunting%20and%20Trapping%20Regulations%20ENGLISH.pdf. Accessed July 24, 2025.

restriction and only clear trees between October 1 and March 31, no further coordination with the ODNR and USFWS was warranted for clearing activities.

However, the ODNR also requested further coordination of a desktop hibernacula assessment to be completed to determine if potential hibernacula are present within the Project area. Since the original coordination, the ODNR and USFWS released a Joint Guidance for Bat Surveys dated May 2025 and recent ODNR responses required additional hibernacula review for potential impacts for activities that impact bedrock and are located within 5-miles of potential hibernacula. If bedrock is anticipated to be impacted and potential hibernacula are located within 5-miles of the Project area, the ODNR request refraining from disturbing bedrock between November to March 31st.

A desktop hibernacula assessment for potential caves, mines, and/or karst features within 0.25 miles and 5-miles of the Project area was submitted to the ODNR on July 21, 2025. Based on the findings, there is only one underground mine opening within 0.25 miles and over 99 underground mine openings within 5 miles. The one mine within 0.25 miles was determined based on-site information and visuals as no longer existing. For the potential hibernacula within 5-miles, ATSI concluded that the Project activities are not anticipated to disturb bedrock and if disturbance is required for installation of bedrock materials, ATSI intends to adhere to the November to March 31st avoidance dates to avoid adverse impacts to the listed bat's hibernacula. The ODNR concurred with ATSI on July 22, 2025 and no further coordination was warranted **Appendix 8-5**.

The ODNR also commented that there is a potential for native freshwater mussel species and one fish species (western banded killifish – *Fundulus diaphanous menona*) as being within range of the Project area. The ODNR commented for both species that if no in-water work is proposed in a perennial stream, that a Project is not likely to impact these species. As the Project does not anticipate impacting any streams and all stream crossed by equipment will be bridge above the OHWM, no impacts to these species are anticipated. Therefore, no further coordination with the ODNR was warranted.

The last species identified by the ODNR included the eastern massasauga (*Sistrurus catenatus*) as being within range of the Project area. However, the ODNR commented that due to the location, the type of habitat within the Project area, and type of work proposed, this Project is not likely to impact this species. Therefore, no further coordination with the ODNR was warranted.

Table 8-5

Federally and State Listed Species potentially within 1,000 feet of Proposed Routes

Species [a]	Status [b, c]	General Habitat Notes	Recorded Location within Project Vicinity	Potential Habitat in Project Area
Vertebrate Animals				
Indiana bat *(Myotis sodalist)*	FE SE	Hibernacula = Caves and mines Maternity and foraging habitat = small stream corridors with well-developed riparian woods and upland forests	The entire state of Ohio is within the range of this species. [b, c]	Yes
Northern long-eared bat *(Myotis septentrionalis)*	FE SE	Hibernacula = Caves and mines Maternity and foraging habitat = small stream corridors with well-developed riparian woods and upland forests	The entire state of Ohio is within the range of this species. [b, c]	Yes
Tricolored bat *(Perimyotis subflavus)*	FE (Proposed) SE	Hibernacula = Caves and mines Maternity and foraging habitat = small stream corridors with well-developed riparian woods and upland forests	The entire state of Ohio is within the range of this species. [b, c]	Yes
Little brown bat *(Myotis lucifugus)*	SE	Hibernacula = Caves and mines Maternity and foraging habitat = small stream corridors with well-developed riparian woods and upland forests	No records but several streams are located within the Project area. [c]	Yes
Western banded killfish *(Fundulus diaphanous menona)*	SE	Perennial Streams	No ODNR records in the vicinity of the Project Area. [c]	Yes
Eastern massasauga (Sistrurus catenatus)	FT SE	Wet prairies, fens, and other wetlands, as well as drier upland habitat	ODNR commented "Due to location, type of habitat within Project area, and type of work proposed, this Project is not likely to impact the species. [c]	No
Native Mussels	State Protected	Streams listed within Ohio Mussel Survey Protocol	No records but several streams are located within the Project area. [c]	Yes

Sources: a: NatureServe Explore. Retrieved July 21, 2025, from https://explorer.natureserve.org/; b: USFWS. 2025. *Technical Assistance Request Correspondence*. February 28, 2025.; c: ODNR-DOW. 2025. Ohio Natural Heritage Database Request Correspondence. March 5, 2025.
FE= Federally Endangered; FT = Federally Threatened; SE = State Endangered

- **Commercial Species**

The commercially important species along the proposed routes include those hunted or trapped for fur or other products, such as the following species. This information was obtained from the ODNR-DOW 2025-2026 Hunting and Trapping Regulations and the ODNR- DOW Species Guide Index (ODNR-DOW, 2025)[1,2].

Beaver (*Castor canadensis*): Beavers occur in forested ponds, lakes, and rivers. In rivers, beavers make burrows with an underwater entrance in the riverbank. However, in streams, lakes and ponds, beavers usually build dams that incorporate a lodge. Based on the habitat present along the routes, this species is unlikely to inhabit locations along the route. This species was not observed during the field investigations.

Coyote (*Canis latrans*): Historically, coyotes prefer open territory, but in Ohio, they have adapted to various habitat types, including forests, clearcuts, and woodlots in rural and urban areas. Coyotes are a very adaptable species that has prospered despite the expanding presence of human impact. This species is likely found near or within the Project but was not observed during field investigations.

Gray Fox (*Urocyon cinereogentus*): The gray fox prefers wooded areas and partially open brush land with little human presence. Based on habitat present along the routes, this species is likely found near or within the Project but was not observed during field investigations. However, they are generally nocturnal animals.

Least Weasel (*Mustela nivalis*): The least weasel inhabits open areas such as meadows, marshes, brushy areas and agricultural fields. Based on habitat present along the routes, this species is not likely found near or within the Project but was not observed during field investigations. However, they are generally nocturnal animals.

Long-tailed Weasel (*Mustela frenata*): The long-tailed weasel is an adaptable animal that can be found in terrestrial habitats near water. Based on habitat present along the routes, this species likely occurs near or within the Project, in proximity to the Mahoning River and Dry Run, but was not observed during field investigations. However, they are generally nocturnal animals.

Mink (*Mustela vison*): Mink are usually found near water, both running and standing. Minks prefer wooded or brushy areas. This species likely occurs near or within the Project, in proximity to the Mahoning River and Dry Run. This species was not observed during the field investigations.

Muskrat (*Ondatra zibethicus*): The muskrat is a large freshwater rodent. This species was not observed during the field investigations, but it could inhabit select locations along the routes, such as the Mahoning River and Dry Run.

Raccoon (*Procyon lotor*): The raccoon is widespread in Ohio, even in many suburban and urban areas. Raccoons prefer wooded areas with water nearby. This species is likely found near or within the Project but was not observed during field investigations.

Red Fox (*Vulpes vulpes*): The red fox inhabits a wide range of habitats. This generally-nocturnal species was not observed during the field investigations, but it could inhabit select locations along

[1] ODNR-DOW. 2025. Hunting and Trapping Regulations 2025 to 2026. Available online at https://dam.assets.ohio.gov/image/upload/ohiodnr.gov/documents/wildlife/laws-regs-licenses/Ohio%20Hunting%20and%20Trapping%20Regulations%20ENGLISH.pdf. Accessed July 24, 2025.

[2] ODNR-DOW. 2025. Online Species Guide Index. Available online at https://ohiodnr.gov/discover-and-learn/safety-conservation/about-ODNR/wildlife/species-guide. Accessed July 24, 2025.

the Proposed Route.

River Otter (*Lontra canadensis*): River otters live in aquatic habitats such as rivers, lakes, and marshes. They prefer tributaries of large, clean drainages where there is minimal human disturbance. Based on the surrounding urban land cover present throughout the area, this species is unlikely to occur along the routes. This species was not observed during the field investigations.

Striped Skunk (*Mephitis mephitis*): The skunk is an adaptable animal that occupies both rural and suburban areas. Their dens may be located under buildings, in open fields, on hillsides, or under logs in the woods, which may have been self-created or formerly used by other animals. This species is likely found near or within the Project but was not observed during field investigations.

Virginia Opossum (*Didelphis virginiana*): This marsupial's preferred habitat is an area interspersed with woods, wetlands, and farmland; however, they are an adaptable animal that can also be found in urban and suburban areas. This species is likely found near or within the Project but was not observed during field investigations.

Recreational Species

Recreational species consist of those hunted as game. Recreational species expected to inhabit areas along the proposed ROW include the following. This information was obtained from the ODNR-DOW 2025-2026 Hunting and Trapping Regulations (ODNR-DOW, 2025) and the ODNR- DOW Species Guide Index (ODNR-DOW, 2025)[1,2].

Fowl

American Crow (*Corvus brachyrhynchos*): The American Crow is found in all Ohio counties. They prefer habitats with open fields and trees. American Crows were observed during the field investigations along the routes.

American Woodcock (*Scolopax minor*): The American Woodcock prefers open, interspersed, early successional habitats, brushy pastures, and woodland borders with moist loam soils. The largest populations occur in northeast, north-central, and central regions of Ohio. This species could inhabit select locations along the routes. No American woodcocks were observed during the field investigations.

American Coot (*Fulica Americana*): Coots inhabit the shallows of freshwater lakes, ponds, or marshes. It is unlikely that this species exists along the proposed routes because they are found mostly in Lake Erie marshes. This species was not observed during surveys.

Geese: Several geese species can be found in Ohio, although typically during migration: snow geese (*Chen caerulescens*), greater white-fronted geese (*Anser albifrons*), cackling geese (*Branta hutchinsii*), and brant (*Branta bernicla*). The Canada goose (*Branta canadensis*) is commonly found throughout Ohio, both as residents and migrants. Habitat for Canada geese was observed along the routes. Canada geese were observed during the field investigations.

Mourning Dove (*Zenaida macroura*): Mourning doves are found near rural and suburban

[1] ODNR-DOW. 2025. Hunting and Trapping Regulations 2025 to 2026. Available online at https://dam.assets.ohio.gov/image/upload/ohiodnr.gov/documents/wildlife/laws-regs-licenses/Ohio%20Hunting%20and%20Trapping%20Regulations%20ENGLISH.pdf. Accessed July 24, 2025.

[2] ODNR-DOW. 2025. Online Species Guide Index. Available online at https://ohiodnr.gov/discover-and-learn/safety-conservation/about-ODNR/wildlife/species-guide. Accessed July 24, 2025.

residences, nesting in shrubs and trees. They are also frequent in rural farmlands nesting in fencerows and edge habitats. Habitat for this species is present throughout the routes. This species was observed frequently during field surveys.

Mergansers: Several merganser species can be found in Ohio, such as the common merganser (*Mergus merganser*), red-breasted merganser (*Mergus serrator*), and hooded merganser (*Lophodytes cucullatus*). Mergansers are found in deep, open waters of lake and rivers. Habitat for these species may be present along the routes in proximity to the Mahoning River. This species was not observed during field surveys.

Northern Bobwhite Quail (*Colinus virginianus*): The northern bobwhite quail is a forest edge species. This species may exist in select locations along northeastern-most portions of the routes; however, it was not observed during field surveys.

Rail: Several rail species can be found in Ohio, such as Yellow rail (*Coturnicops noveboracensis*), black rail (*Laterallus jamaicensis*), king rail (*Rallus elegans*), and Virginia rail (*Rallus limicola*). Rails are found in densely vegetated wetlands and marshes. Habitat for these species may be present along the routes. This species was not observed during field surveys.

Ring-necked Pheasant (*Phasianus colchicus*): This species can be found primarily along agricultural edges. Pheasants succeed where farming is intensive if there is adequate undisturbed cover for nesting, and sufficient food and cover during winter. This species likely does not inhabit areas along the routes. No pheasants were observed during field surveys.

Ruffed Grouse (*Bonasa umbellus*): Grouse habitat includes mixed hardwood shrub and forest stands. Habitat for these species is not present along the routes. This species was not observed during field surveys.

Teal: Several teal species could be found in Ohio. The cinnamon teal (*Anas cyanoptera*), green- winged teal (*Anas crecca*), and blue-winged teal (*Anas discors*) are waterfowl. They are usually birds of fresh, shallow marshes and rivers instead of large lakes and bays. Habitat for these species may be present along the routes, in proximity to the Mahoning River and Dry Run. This species was not observed during field surveys.

Various duck species: Various duck species can be found in Ohio, most of which only during migration. The American black duck (*Anas rubripes*), redhead (*Aythya americana*), greater scaup (*Aythya marila*), lesser scaup (*Aythya affinis*), canvasback (*Aythya valisineria*), and northern pintail (*Anas acuta*) are usually only found in Ohio during migration and could be found near the proposed routes at that time. The mallard (*Anas platyrhynchos*) and wood duck (*Aix sponsa*) are two duck species that regularly reside and migrate through Ohio.

Mallard: Most mallards occupy extensive wetlands; however, they are very adaptable. Mallards can be found inhabiting small farm ponds, ditches with flowing water, streams, lakes, and ponds in urban areas. This species was observed occasionally during field surveys and sufficient habitat for this species exists throughout the routes.

Wood Duck: The wood duck prefers mature riparian corridors, quiet backwaters of lakes, ponds bordered by large trees, and secluded wooded swamps. Habitat for this species is present within the vicinity of select locations along the routes, specifically the

northeastern-most portions of the routes. This species was not observed during field surveys.

Wild Turkey (*Meleagris gallopavo*): Wild turkeys are adaptable animals. Although they prefer mature forests, they can thrive in areas with as little as 15 percent forest cover. This species was not observed during the field surveys and it is not likely present throughout the routes.

Mammals

Eastern Cottontail Rabbit (*Sylvilagus floridanus*): This species is found in both rural and urban areas. They prefer open areas bordered by thickets or brush areas. This species prefers habitat found throughout the routes and the species and its habitat was observed during the field surveys.

Feral Swine (*Sus scrofa*): Feral swine (wild boar) are not native to Ohio, but have established breeding populations in several locations, occupying a wide variety of habitats, including forests, cropland, and shrubland. Distribution maps indicate that feral swine have not been recorded in the vicinity of the Project Area.

Squirrel (Gray, Red, and Fox) (*Sciurus carolinensis*, *Tamiasurius hudsonicus*, and *Sciurus niger*, respectively): The fox squirrel is primarily an inhabitant of isolated woodlots 10 to 20 acres in size with a sparse understory. The eastern gray squirrel prefers more extensive woodland areas. The red squirrel prefers coniferous and mixed forests. Squirrels were observed during the field surveys along the routes.

White-tailed Deer (*Odocoileus virginianus*): White-tailed deer are found in rural and suburban areas. Indirect evidence of this species was observed during the field surveys along the routes.

Woodchuck (*Marmota monax*): Woodchucks (groundhogs) live in open grasslands, pastures, and woodlands. This species was not observed during field surveys; however, indirect evidence of this species was observed during the field surveys along the routes.

Game Fish

Based upon the hydrologic connectivity and the nature of the surface water habitats present within the field survey area, game fish species may inhabit some of the streams that are crossed by the routes. A list of game fish known to occur in Ohio was obtained from ODNR-DOW's Sport Fish of Ohio Identification Guide (ODNR-DOW, 2012)[1].The list was narrowed to fish most likely to be found in streams located within the field survey area based on professional judgment and experience, and as such, the list of species presented in this section is not an exhaustive list of all species potentially present in the field survey area. The listed species are known to be regionally common and may occur within the surface water features proposed to be impacted.

Bluegill (*Lepomis macrochirus*): Bluegill are found throughout the state, preferring clear ponds and lakes with rooted vegetation. This species is likely to occur in streams along the routes.

[1] ODNR-DOW. Sport Fish of Ohio Identification. Available at https://dam.assets.ohio.gov/image/upload/ohiodnr.gov/documents/wildlife/backyard-wildlife/Sport%20Fish%20of%20Ohio%20Field%20Guide%20pub334.pdf. Accessed August 20, 2025.

Common Carp (*Cyprinus carpio*)**:** Carp can be found throughout the state, preferring turbid waters rich in organic matter. It is likely that common carp are present in streams along the routes.

Green Sunfish (*Lepomis cyanellus*)**:** Green sunfish are present in most lakes and streams throughout the state and are tolerant of turbid water. They are regularly associated with some type of structure such as brush, vegetation, or rocks. This species is likely to occur in streams along the routes.

Largemouth Bass (*Micropterus salmoides*): Largemouth bass are found in ponds, lakes, and slow sluggish streams throughout the state. This species is likely to occur in streams along the routes.

Longear Sunfish (*Lepomis megalotis*): Longear sunfish are found in streams and lakes throughout the state. They prefer sluggish, clear streams of moderate size with beds of aquatic vegetation. This species may occur in streams along the routes.

Redear Sunfish (*Lepomis microlophus*)**:** Redear sunfish are not native to Ohio. They are found primarily in clear, warm waters with vegetation. This species may occur in streams along the routes.

White Crappie (*Pomoxis annularis*): White crappie can be found in larger ponds, lakes, and rivers. White crappie can tolerate a wide variety of habitats and conditions. This species is regularly found near structures such as fallen trees, stumps, docks, rocks, and aquatic vegetation. This species may occur in streams along the routes.

(B)(1)(e): Based on the nature of the proposed Project and habitat characteristics of the surrounding vicinity, the potential for construction impacts to the listed bat species' summer roosting habitat is anticipated for this Project. Based on adherence to the seasonal clearing restriction (October 1st to March 31st), however, the agencies determined that these species will not be adversely impacted from the Project. If clearing activities are required outside of this seasonal restriction, ATSI will coordinate with USFWS and ODNR for further avoidance and minimization measures, including completion of summer mist net surveys and/or selective cutting of roost trees (if applicable).

(B)(1)(f): In the ODNR response dated March 5, 2025, and the ODNR and USFWS Joint Guidance for Bat Surveys dated May 2025, a desktop hibernacula survey was required for the Project. The desktop habitat assessment was completed and included as **Appendix 8-5**. The results of the desktop hibernacula survey identified one mine within 0.25 miles that no longer exists and 99 mine portal openings within 5 miles of the Project area. As subsurface activities are limited, unlikely to occur for this Project, and if required, ATSI intends to adhere to not impacting the bedrock between November 15 and March 31, adverse impacts associated with potential bat hibernacula are not likely to occur as result of this Project. Concurrence from the ODNR was obtained and included within **Appendix 8-5**.

(B)(2) Ecological Impacts

(B)(2)(a)(i): No streams will be disturbed by the Project activities. All stream crossings will be aerial spanned by the electric transmission line or crossed with equipment via temporary timber mat bridge installed above the OHWM. Where stream widths exceed the capacity of timber matting bridge methods, crossings will be avoided, and access will be limited to each side for vegetation clearing and/or foundation installation. A summary of streams identified within the

ROW is provided as **Table 3** in **Appendix 8-3**. None of these streams will be impacted by the Project. **Figures 2** and **3** of **Appendix 8-3** display the identified resources within the Project area.

Two stream crossings (both on the Mahoning River) are listed as Navigable Waters and will warrant a Section 10 authorization provided via PCN NWP-57 by the USACE.

(B)(2)(a)(ii): A total of 34 wetlands were identified within the Project area, with only seven wetlands identified within the ROW of the Proposed Route. Of these seven wetlands, one Palustrine Forested (PFO) wetland will be impacted by disturbance activities involving structure foundation installation and temporary timber matting fills and a Palustrine Emergent (PEM)/Palustrine Scrub-Shrub (PSS) portion of a wetland will result in temporary timber matting fills only. All other wetlands will likely be avoided from construction activities involving equipment access and/or structure foundations.

For the forested or scrub-shrub wetlands located within the ROW and not crossed by an access road or work area, these wetlands will be hand-cleared without removal of the stumps or grubbing techniques to avoid impacts to these wetlands. Additionally, the one PEM/PSS wetland complex anticipated to be crossed by temporary timber matting will result in disturbance less than 0.10-acre and will be compliant with the general conditions of the NWP-57. However, the one PFO wetland associated with structure fill will be subject to a PCN NWP-57 authorization from the USACE. All wetlands impacted by the Project are assumed to be jurisdictional and issuance of Section 401 Water Quality Certification is automatic NWP upon adherence to the terms and conditions of the Nationwide Program. As such, no coordination with the OEPA is warranted for this Project.

A summary of all wetlands identified within the Project area is provided within **Table 2** in **Appendix 8-3.** A table that displays the seven wetland crossings and approximated disturbance is provided below in **Table 8-6**. **Figures 2** and **3** of **Appendix 8-3** display the identified resources within the Project area.

Table 8-6
Anticipated Wetland Crossings

Wetland Complex Count	Wetland Name	Cowardin Classification[a]	ORAM Score	Crossing Methodology	Estimated Acreage within ROW	Estimated Acreage of Disturbance
1	Wetland RLP-08a	PEM	Category 2	Avoided	0.02	0.00
	Wetland RLP-08b	PFO		Hand Clearing Only[1]	0.01	0.00
2	Wetland RLP-09a	PSS	Category 2	Hand Clearing Only[1]	0.04	0.00
	Wetland RLP-09b	PEM		Avoided	0.02	0.00
3	Wetland RLP-10	PSS	Category 2	Avoided	0.06	0.00
4	Wetland RLP-11	PEM	Category 2	Avoided	<0.01	0.00
5	Wetland RLP-12	PEM	Category 1	Avoided	0.03	0.00
6	Wetland RLP-14	PFO	Category 1	Structure and Temporary Timber Matting	0.16	**Structure:** <0.01 (Perm) **Temp Work Pad:** 0.05 (Temp)
7	Wetland RLP-17a	PEM	Category 2	Temporary Timber Matting	0.05	0.03
	Wetland RLP-17b	PSS		Temporary Timber Matting	0.02	
	Wetland RLP-17c	PFO		Hand Clearing Only[1]	0.06	0.00
Totals	**Forested Wetland (PFO) - Clearings (Hand Clearing Only[1]) within ROW**					**0.18**
	Forested Wetland (PFO) – Permanent Fills – Structure Foundation					**<0.01**
	Forested Wetland (PFO) – Temporary Timber Matting Fills					**0.05**
	Non-Forested Wetland (PEM or PSS) Temporary Timber Matting Fills					**0.03**

a) Cowardin, et al. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, U.S. Department of the Interior, Washington, D.C.;
Notes:

1) As per guidance from the USACE under Section 404 of the Clean Water Act, discharge of dredge or fill material into waters of the United States, including wetlands are subject to the Nationwide Permit. Activities that do not result in discharge of dredge of fills, such as hand clearing of forested wetlands without grubbing and leaving the stump of trees' root systems intake, do not result in disturbance of wetland and are not subject to Section 404 authorization (See 33 CFR Part 323).

(B)(2)(a)(iii): The construction impacts on woody and herbaceous vegetation will be limited to clearing within the 65-foot ROW and access roads. Specific locations for access roads will be identified at the time of ATSI's transmission line easement acquisition process. Trees adjacent to the proposed transmission line ROW that are dead, dying, diseased, leaning, significantly encroaching, or prone to failure may require clearing to allow for safe operation of the transmission line. Vegetative wastes (such as tree limbs and trunks) generated during the construction phase will be windrowed or chipped and disposed of appropriately depending on individual landowner requests, and applicable permit requirements. The approximate vegetation impacts along the Project ROW are provided in **Table 8-4.**

(B)(2)(a)(iv): The Project area is heavily urbanized/developed area of the City of Youngstown where tree clearing activities are limited to specific isolated areas of forested woodlots across the Project footprint. During route development and efforts to reduce forested fragmentation, the siting team attempted to identify routes that followed the edges of existing corridors, such as railroad easements, roadways, and other utilities. As a result, the majority of the forested areas for this Project are associated with fragmented woodlots surrounded by or within urbanized/residential developments.

Due to the linear nature of the project and surrounding industrial, commercial, or residential development, complete avoidance of forested woodlots was not feasible. The Proposed Route results in approximately 37% of the ROW that will require forested area clearing. Despite the areas proposed for forested clearing for the Project, the impact will be minimal as the existing conditions of these areas are mostly along or within existing developments. On the Proposed Route, one intact woodlot located between the housing developments at Wilson Avenue and intersection of Van Buren Avenue with Keystone Street was not able to be avoided due to surround residential area.

(B)(2)(a)(v): Based on the nature of the proposed Project and habitat characteristics of the surrounding vicinity, construction impacts to the listed bat species are not anticipated to occur due to ATSI's adherence to the seasonal tree clearing restriction between October 1st and March 31st. If additional clearing activities are required for the Project, ATSI will coordinate with USFWS and ODNR to avoid or minimize construction impacts to the associated habitat of the listed species to the extent possible.

The construction impact to other identified species (recreational and commercial) is expected to be minor because equivalent habitat that may be impacted during construction exists immediately adjacent to the construction ROW, and the identified species are mobile.

Minimal impacts are anticipated to wildlife during operation and maintenance of the transmission line. ATSI will not conduct mechanized clearing within 25 feet of any stream and will only clear those trees in this area that are tall enough to have the potential to interfere with safe construction and reliable operation of the line. Operational activities and periodic maintenance of the ROW are not anticipated to impact wildlife significantly because of the minimal permanent ground disturbance and available adjacent habitat available.

(B)(2)(b) Short Term and Longterm Mitigation Procedures for Construction

(B)(2)(b)(i) After construction is complete, the Project workspace will be restored to conditions as good as those that existed prior to construction. This includes the restoration of drainage ditches, repair or replacement of any pre-existing or damaged fencing or field drainage tiles (or damage thereto), the seeding and mulching of disturbed non-cultivated areas; and the removal of temporary

soil erosion and sedimentation control measures after vegetative cover has been established. Disturbed areas adjacent to streams and wetlands will be revegetated using methods to minimize soil erosion and degradation.

Lawn or garden areas, or paved areas damaged during the construction of the transmission line, will be restored to original condition. Landscaping or landscape plantings damaged during construction will also be restored to original condition or replaced to the extent possible and practical as requested by the affected property owner.

Temporary and permanent seeding will be coordinated with construction activities to provide re-vegetation and soil stabilization at the earliest reasonable time. Following construction, all pole locations, material storage sites, and temporary access roads will be restored and seeded with a suitable grass seed mixture that will be specified in the erosion and sediment control plan.

(B)(2)(b)(ii): No horizontal directional drilling is anticipated to occur during construction of this Project. Therefore, a detailed frac out contingency plan is not required.

(B)(2)(b)(iii): Prior to construction activities, the boundaries of wetlands and waterways will be flagged in the field for avoidance and/or identification of impacted areas within the Project ROW and associated access roads. Wetlands, streams, and any other environmentally sensitive areas will be clearly staked, flagged, or fenced in accordance with the SWPPP prior to the commencement of any clearing in order to minimize incidental impacts. BMPs such as utilization of silt fences and construction mating will be implemented as required during construction.

(B)(2)(b)(iv): Procedures for inspection and repair of erosion control measures, especially after rainfall events, will be outlined in the SWPPP. The SWPPP will include a requirement for regular inspections of erosion and sediment control measures by a qualified individual throughout constructure to determine if installed BMPs are functioning in accordance with applicable standards.

(B)(2)(b)(v): After construction is complete, the Project workspace will be restored to conditions as good as those that existed prior to construction. This includes the restoration of drainage ditches, repair or replacement of any pre-existing or damaged fencing or field drainage tiles (or damage thereto), the seeding and mulching of disturbed non-cultivated areas; and the removal of temporary soil erosion and sedimentation control measures after vegetative cover has been established. Disturbed areas adjacent to streams and wetlands will be revegetated using methods to minimize soil erosion and degradation.

Lawn or garden areas, or paved areas damaged during the construction of the transmission line, will be restored to original condition. Landscaping or landscape plantings damaged during construction will also be restored to original condition or replaced to the extent possible and practical as requested by the affected property owner.

Temporary and permanent seeding will be coordinated with construction activities to provide re-vegetation and soil stabilization at the earliest reasonable time. Following construction, all pole locations, material storage sites, and temporary access roads will be restored and seeded with a suitable grass seed mixture that will be specified in the erosion and sediment control plan.

(B)(2)(b)(vi): ATSI will not conduct mechanized clearing within 25 feet of any stream and will only clear those trees in this area that are tall enough to or have the potential to interfere with safe and reliable construction and operation of the transmission line. Trees adjacent to the proposed transmission line ROW that are dead, dying, diseased, leaning, significantly encroaching, or prone

to failure may require clearing to allow for safe and reliable operation of the transmission line. Vegetative waste (such as tree limbs and trunks) that is generated during the construction phase will be windrowed or chipped and managed in accordance with applicable permit requirements.

(B)(2)(b)(vii): As discussed above in Section 4906-4-08(B)(1)(viii)(e), consultation letters were received from USFWS and ODNR on February 28 and March 5, respectively. ATSI will adhere to the following avoidance measures to minimize or avoid potential impacts to state or federally listed and protected species and their habitat:

- Adhere to the seasonal restriction of only clearing trees between October 1 and March 31 to avoid impacts to protected bat species.
- Avoid disturbing bedrock between November 15 and March 31 to avoid impacts to bat hibernacula.
- All stream crossings will be completed via bridge above the OHWM to protect aquatic species.
- If federal or state listed species are encountered during construction activities, activities would be halted and the OPSB would be contacted within twenty-four hours. Construction activities would remain paused until an appropriate course of action has been agreed upon by the applicant, board staff, and other applicable administrative agencies.
- A staff-approved environmental specialist will be onsite during construction activities that may affect sensitive areas. Sensitive areas include, but are not limited to, wetlands, streams, and locations where threatened or endangered species may occur. A map shall be provided to staff showing sensitive areas which would be impacted during construction with information on when the environmental specialist would be present.

(B)(2)(b)(viii): A SWPPP will be developed specifically for the Project and specified BMPs will be implemented during construction to control erosion and sedimentation. Areas where soil has been disturbed will be seeded and mulched to prevent soil erosion. Measures to divert stormwater runoff away from fill slopes and other exposed surfaces will be outlined in the SWPPP.

(B)(2)(b)(ix): Herbicide use on the Project will be in accordance with applicable state and federal regulations and will be applied in accordance with the manufacturer instructions, which include requirements related to the suitability of a particular herbicide for use near surface water. Only appropriate mixtures and selective methods of application including low-volume foliar and cut stump treatment will be used to support the construction of the Project. The application of a stump herbicide treatment consists of applying herbicide to the cambium layer of the stump and associated root flares. A low-volume foliar application method targets specific incompatible vegetation by applying the herbicide directly on the foliage of the target vegetation, while minimizing potential overspray.

The herbicides used during construction of the Project work on enzymes found only within plants, not people or animals. These compounds enter through leaves, stems, and stumps and control plant growth from the inside of the plant. The products used have undergone years of testing and will be used only as approved by appropriate government agencies. The U.S. Environmental Protection Agency (USEPA) approves such products for use only after determining that they will not adversely affect human health or the environment when properly applied. The crews that apply herbicides will follow strict usage guidelines in accordance with the labeling and application requirements. Workers who apply herbicides must hold a pesticide applicator license from the state of Ohio or work under the direct supervision of a certified applicator.

(B)(3) Operational Ecological Impacts

Operational ecological impacts. Information regarding potential impacts to ecological resources during operation and maintenance of the facility.

(B)(3)(a): Operational activities and periodic maintenance will result in minimal ground disturbance, therefore, impacts to undeveloped areas are anticipated to be negligible. Normal operation or maintenance activities may include mowing, spraying, and/or trimming of vegetation within the established ROW for the Project. These activities will be completed within the existing ROW, which is an existing disturbance area developed for the Project to operate. Operational and maintenance activities would avoid undeveloped areas outside of the ROW to the extent feasible.

(B)(3)(b)(i): The Project is not anticipated to cause any operational impacts to wildlife or natural resources. ATSI, as a FirstEnergy Company, abides by the FirstEnergy Biodiversity Commitment and Conservation Practices, utilizing integrated vegetation management to mindfully reseed and maintain ROW areas following construction (First Energy, 2024)[1]. Following construction, ROWs would be managed by FirstEnergy's Vegetation Management Department, and the ROW would be restored/maintained using region-specific native seed mixes.

(B)(3)(b)(ii): During operation and maintenance activities, ATSI will avoid mechanized clearing within 25 feet of any stream and will only clear trees that have potential to interfere with reliable operation of the transmission line. For equipment access during operation or maintenance activities, installation of temporary timber matting bridge or equivalent will be utilized for all stream and wetland crossings. For stream crossings, the timber matting will be installed above the OHWM to avoid stream disturbances. Crossings of wetlands will be completed within the existing, cleared ROW to limit disturbance of temporary timber matting fills within areas previously disturbed from the Project.

(B)(3)(b)(iii): Herbicides may be used during maintenance activities to control vegetation within the ROW to allow the safe and effective operation of the transmission line. Herbicide use will follow environmental and safety regulations and protocol to minimize risks to equipment, personnel, and nearby ecosystems.

(B)(3)(c): No Project-specific post-construction monitoring of wildlife is anticipated. FirstEnergy routinely monitors for nesting species as part of their Avian Protection Program due to ospreys, bald eagles, and other migratory birds seeking out utility poles and transmission towers to perch and build their nests. FirstEnergy utilizes drone technology to monitor, routinely inspect, and observe activity on poles and transmission towers to evaluate situations while maintaining required buffers and not disturb nests that may contain eggs (First Energy, 2024)[1].

(B)(4) Mitigation Procedures

Mitigation for use restrictions on the ROW, vegetative clearing, and maintenance activities for the transmission line, will be determined as part of ATSI's acquisition of the ROW for this Project as part of the negotiated settlement between ATSI and the property owner or as determined in appropriation proceedings. If an existing septic system located in the transmission ROW is

[1] First Energy. (2024). Biodiversity and Conservation. Retrieved July 23, 2025, from Corporate Responsibility: https://fecorporateresponsibility.com/fecorporateresponsibility/environment/conservation-practices.html

impacted by construction, operation, or maintenance of the proposed Project, the septic system will be repaired or replaced by ATSI as necessary to meet the appropriate installation requirements.

(B)(5) Prevention of Noxious Weed Propagation

Management and control and noxious weeds identified in Adm.Code 901:5-37 will be included in the final design and specifications of the Project. ATSI will comply with any public orders related to the abatement of noxious weeds. ATSI will implement standard BMPs to limit or avoid the spread of invasive species, including inspecting and thoroughly cleaning all heavy equipment to remove any rhizomes or seeds prior to conducting maintenance activities on the Project area, thereby minimizing potential dispersion of invasive species. Furthermore, restoring the ROW with native seed mixes will diminish the opportunity for invasive species to establish.

(C) Information on Land Use and Community Development

A description of the Proposed Route and the existing and planned land uses along the Proposed Route is provided in the following sections.

(C)(1)(a)(i)-(vi): Two maps at 1:24,000-scale, including the area 1,000 feet on either side of the centerline, are presented as **Figure 3-2** and **Figure 8-3** (refer to Section 4906-5-05) and include the following information:

- Centerline and ROW;
- Existing substation locations;
- Land use types;
- Road names;
- Structures; and
- Incorporated areas and population centers

(C)(1)(b): A map at 1:6,000 scale, including a 200 ft buffer on either side of the Proposed Route ROW and 250 feet centered on proposed access roads is presented on **Figure 8-5**. The property lines within 200 feet of the Proposed Route centerline are also presented on **Figure 8-5**.

(C)(1)(b)(i): There are 142 structures within 200 ft of the Proposed Route. Of these, 57 are commercial structures, 17 are industrial, 8 are institutional, and 60 are residential. **Table 8-7** identifies these structures and the distance of each structure to the ROW. For the structures located within 200-foot of the Proposed Route, five of these structures are located within the ROW. However, the potential removal of structures within the proposed ROW was generally mitigated during the RSS process through the placement of route centerlines and no impacts to these structures are anticipated. It is not anticipated that construction of the Proposed Route will require the removal of any structures.

(C)(1)(b)(ii): Similarly, there are 177 structures located within 250 ft of the access roads. Sixty-seven of these are commercial structures, 23 are industrial, 12 are institutional, and 75 are residential. None of these structures will be directly impacted by the temporary access roads. **Table 8-8** identifies these structures and notes the distance of each from the Access Road.

(C)(1)(b)(iii): ATSI intends to obtain easement agreements with all impacted landowners impacted

by the Project ROW for installation of the electric transmission line. Temporary agreements for access and work areas will be obtained with these landowners prior to construction. ATSI does not anticipate leasing any parcels impacted by the Project.

Table 8-7

Structures within 200 ft of the ROW

Structure ID	Structure Type	Distance to Edge of ROW (feet)
S-1	Industrial	116
S-2	Industrial	26
S-3	Industrial	169
S-4	Commercial	77
S-5	Commercial	19
S-6	Commercial	31
S-7	Commercial	24
S-8	Industrial	43
S-9	Residence	84
S-10	Residence	87
S-11	Commercial	101
S-12	Residence	33
S-13	Industrial	12
S-14	Residence	195
S-15	Industrial	34
S-16	Commercial	139
S-17	Industrial	61
S-18	Industrial	81
S-19	Commercial	77
S-20	Institutional	134
S-21	Residence	177
S-22	Residence	157
S-23	Residence	10
S-24	Residence	180
S-25	Industrial	45
S-26	Residence	145
S-27	Residence	81
S-28	Industrial	0
S-29	Residence	42
S-30	Residence	55
S-31	Residence	50
S-32	Residence	52
S-33	Residence	116
S-34	Residence	54
S-35	Residence	183
S-36	Residence	118
S-37	Residence	51
S-38	Institutional	52
S-39	Residence	112
S-40	Residence	142
S-41	Residence	192
S-42	Residence	63
S-43	Residence	178
S-44	Residence	49
S-45	Residence	127
S-46	Commercial	134
S-47	Residence	161
S-48	Residence	135
S-49	Residence	166
S-50	Residence	159
S-51	Industrial	24
S-52	Industrial	131

Structure ID	Structure Type	Distance to Edge of ROW (feet)
S-53	Residence	176
S-54	Commercial	137
S-55	Commercial	161
S-56	Institutional	103
S-57	Institutional	191
S-58	Residence	44
S-59	Commercial	131
S-60	Commercial	196
S-61	Residence	191
S-62	Residence	182
S-63	Residence	160
S-64	Residence	147
S-65	Residence	132
S-66	Residence	105
S-67	Commercial	115
S-68	Commercial	142
S-69	Commercial	117
S-70	Commercial	77
S-71	Commercial	73
S-72	Commercial	80
S-73	Commercial	53
S-74	Commercial	24
S-75	Commercial	54
S-76	Commercial	78
S-77	Commercial	108
S-78	Commercial	36
S-79	Commercial	20
S-80	Commercial	33

Structure ID	Structure Type	Distance to Edge of ROW (feet)
S-81	Commercial	15
S-82	Commercial	0
S-83	Commercial	27
S-84	Commercial	20
S-85	Residence	62
S-86	Commercial	50
S-87	Residence	87
S-88	Commercial	27
S-89	Commercial	35
S-90	Commercial	71
S-91	Residence	130
S-92	Residence	162
S-93	Residence	148
S-94	Residence	178
S-95	Residence	197
S-96	Commercial	65
S-97	Commercial	0
S-98	Institutional	115
S-99	Institutional	57
S-100	Industrial	179
S-101	Industrial	29
S-102	Industrial	192
S-103	Commercial	44
S-104	Institutional	98
S-105	Commercial	-1
S-106	Commercial	85
S-107	Commercial	197
S-108	Commercial	100

Structure ID	Structure Type	Distance to Edge of ROW (feet)
S-109	Commercial	80
S-110	Commercial	56
S-111	Residence	17
S-112	Commercial	0
S-113	Residence	29
S-114	Residence	99
S-115	Commercial	61
S-116	Residence	9
S-117	Residence	134
S-118	Residence	192
S-119	Residence	186
S-120	Residence	148
S-121	Residence	145
S-122	Residence	121
S-123	Residence	79
S-124	Residence	74
S-125	Residence	120
S-126	Residence	28
S-127	Residence	92
S-128	Commercial	64
S-129	Commercial	62
S-130	Industrial	31
S-131	Commercial	58
S-132	Commercial	11
S-133	Commercial	172
S-134	Industrial	123
S-135	Commercial	58
S-136	Commercial	77
S-137	Commercial	81
S-138	Commercial	87
S-139	Institutional	86
S-140	Commercial	105
S-141	Commercial	71
S-142	Commercial	100

Table 8-8

Structures within 250ft of Access Roads

Structure ID	Structure Type	Distance to Access Road Centerline
S-1	Industrial	169
S-2	Industrial	79
S-3	Industrial	193
S-4	Commercial	116
S-5	Commercial	66
S-6	Commercial	76
S-7	Commercial	69
S-8	Industrial	54
S-9	Residential	129
S-10	Residential	131
S-11	Commercial	140
S-12	Residential	76
S-13	Industrial	28
S-14	Residential	215
S-15	Industrial	47
S-16	Commercial	171
S-17	Industrial	26
S-18	Industrial	17
S-19	Commercial	77
S-20	Institutional	89
S-21	Residential	197
S-22	Residential	176
S-23	Residential	28
S-24	Residential	198
S-25	Industrial	61
S-26	Residential	162
S-27	Residential	98
S-28	Industrial	18
S-29	Residential	90
S-30	Residential	103
S-31	Residential	96
S-32	Residential	98
S-33	Residential	146
S-34	Residential	88
S-35	Residential	198
S-36	Residential	131
S-37	Residential	93
S-38	Institutional	68
S-39	Residential	164
S-40	Residential	169
S-41	Residential	218
S-42	Residential	110
S-43	Residential	209
S-44	Residential	67
S-45	Residential	145
S-46	Commercial	151
S-47	Residential	208
S-48	Residential	153
S-49	Residential	214
S-50	Residential	206
S-51	Industrial	35
S-52	Industrial	147

Structure ID	Structure Type	Distance to Access Road Centerline
S-53	Residential	223
S-54	Commercial	151
S-55	Commercial	173
S-56	Institutional	119
S-57	Institutional	206
S-58	Residential	60
S-59	Residential	180
S-60	Commercial	247
S-61	Residential	242
S-62	Residential	199
S-63	Commercial	212
S-64	Residential	199
S-65	Residential	149
S-66	Residential	122
S-67	Commercial	169
s-68	Commercial	190
S-69	Commercial	176
S-70	Commercial	133
S-71	Commercial	92
S-72	Commercial	136
S-73	Commercial	105
S-74	Commercial	79
S-75	Commercial	85
S-76	Commercial	124
S-77	Commercial	157
S-78	Commercial	75
S-79	Commercial	31
S-80	Commercial	84
S-81	Commercial	27

Structure ID	Structure Type	Distance to Access Road Centerline
S-82	Commercial	14
S-83	Commercial	1
S-84	Commercial	19
S-85	Residential	72
S-86	Commercial	63
S-87	Residential	97
S-88	Commercial	45
S-89	Commercial	28
S-90	Commercial	120
S-91	Residential	140
S-92	Residential	182
S-93	Residential	157
S-94	Residential	199
S-95	Residential	206
S-96	Commercial	58
S-97	Commercial	46
S-98	Institutional	108
S-99	Institutional	106
S-100	Industrial	204
S-101	Industrial	37
S-102	Industrial	248
S-103	Commercial	87
S-104	Institutional	120
S-105	Commercial	239
S-106	Commercial	110
S-107	Commercial	218
S-108	Commercial	123
S-109	Commercial	102
S-110	Commercial	81

Structure ID	Structure Type	Distance to Access Road Centerline
S-111	Residential	24
S-112	Commercial	15
S-113	Residential	36
S-114	Residential	106
S-115	Institutional	35
S-116	Residential	16
S-117	Residential	140
S-118	Residential	201
S-119	Residential	212
S-120	Residential	156
S-121	Residential	161
S-122	Residential	143
S-123	Residential	122
S-124	Residential	118
S-125	Residential	152
S-126	Residential	47
S-127	Residential	108
S-128	Commercial	84
S-129	Commercial	80
S-130	Industrial	78
S-131	Commercial	80
S-132	Commercial	27
S-133	Commercial	223
S-134	Industrial	91
S-135	Commercial	45
S-136	Commercial	14
S-137	Commercial	19
S-138	Commercial	53
S-139	Institutional	84

Structure ID	Structure Type	Distance to Access Road Centerline
S-140	Commercial	7
S-141	Commercial	120
S-142	Commercial	29
S-143	Industrial	123
S-144	Industrial	31
S-145	Industrial	117
S-146	Industrial	96
S-147	Industrial	69
S-148	Commercial	191
S-149	Residential	154
S-150	Commercial	104
S-151	Commercial	228
S-152	Commercial	250
S-153	Commercial	237
S-154	Commercial	166
S-155	Institutional	150
S-156	Institutional	190
S-157	Institutional	230
S-158	Industrial	174
S-159	Commercial	220
S-160	Commercial	163
S-161	Commercial	225
S-162	Residential	231
S-163	Residential	248
S-164	Residential	245
S-165	Residential	221
S-166	Residential	237
S-167	Residential	214
S-168	Residential	243

Structure ID	Structure Type	Distance to Access Road Centerline
S-169	Residential	241
S-170	Residential	249
S-171	Residential	224
S-172	Residential	216
S-173	Residential	226

Structure ID	Structure Type	Distance to Access Road Centerline
S-174	Residential	246
S-175	Commercial	43
S-176	Commercial	28
S-222	Residential	244

(C)(1)(b)(iv): Mitigation for use restrictions on the ROW, vegetative clearing, and maintenance activities for the transmission line, will be determined as part of ATSI's acquisition of the ROW for this Project as part of the negotiated settlement between ATSI and the property owner or as determined in appropriation proceedings. If an existing septic system located in the transmission ROW is impacted by construction, operation, or maintenance of the proposed Project, the septic system will be repaired or replaced by ATSI as necessary to meet the appropriate installation requirements.

(C)(1)(c): The construction impact on land use is associated with both temporary and permanent impacted areas. The approximate temporary and permanent impact area for each land use type is provided below in **Table 8-9**. The permanent impact areas were established as the Project ROW and temporary impacted areas as access roads that extend outside of the established ROW for the Project. For the permanently impacted areas, the existing land use will remain following construction; however, there will be restricted or limited use for development within the existing ROW. Structure foundations also contribute to the change of land use within the Project area; however, the overall size of the foundations relative to the size of the overall Project would be insignificant. For temporary impacts, anticipated locations of these access roads are identified on **Figure 3-3**. Locations of these access roads cannot be finalized until after the route is approved and the Applicant interfaces with affected landowners. Where access across wetlands or streams is necessary, construction matting (or equivalent) will be used to minimize disturbances. If field conditions necessitate modifications of the finalized access-road locations during construction, the concurrence of the property owners will be obtained, necessary environmental field studies will be performed, and necessary permits will be updated. Following construction, all temporary access roads will be restored and seeded with a suitable grass seed mixture that will be specified in the erosion and sediment control plan.

Table 8-9

Temporary and Permanent Impacts

Land Use	Temporary Impacts (Access Roads; Acres)	Permanent Impacts (ROW; Acres)
Government or Public Owned or Open Space	7.6	5.6
Industrial	27.1	20.1
Residential	12.9	8.2

(C)(1)(d): No structures will be impacted directly, removed, or relocated for this Project.

(C)(2)(a)-(d): This rule is inapplicable as this Project is not a wind farm.

(C)(3)(a)-(c): This rule is inapplicable as this Project is not a wind farm.

(C)(4) Land use plans

(C)(4)(a): The Applicant reviewed the Youngstown 2010 Citywide Plan. No conflicts with future proposed land uses outlined in the Citywide Plan were identified. As such, the Project is compatible with the current regional land use plan and will support its implementation by allowing for further economic development in the Project area.

(C)(4)(b): The Applicant does not have any plans for concurrent or secondary uses of the Project Area.

(C)(4)(c): By increasing reliability of the transmission and sub transmission systems in the Youngstown and surrounding areas, the Project would have an indirect beneficial impact on development in the region. The Project is not anticipated to negatively impact development in the region. No direct impacts to housing, commercial and industrial developments, schools, transportation systems, or other public services are anticipated. Notably, the Project has been sited to avoid the recently constructed Youngstown Foundation Amphitheater and associated greenspace located north of the Mahoning River and west of the Covelli Center.

(C)(4)(d): The Applicant reviewed the Youngstown 2010 Citywide Plan. No conflicts with future proposed land uses outlined in the plan were identified. As such, the Project is compatible with the current regional land use plan and will support its implementation by allowing for further economic development in the Project area.

(C)(4)(e): A table with the above information is provided below.

Table 8-10

Population Characteristics

Municipality	2013 Population Estimate	2023 Population Estimate	Growth rate (2013 – 2023)	2033 Population Projection	2023 Population Density (people per sq mile)
City of Youngstown	66,511	59,605	-10.4%	53,406	1,753
City of Campbell	8,181	7,812	-4.5%	7,460	2,089
Mahoning County	237,033	227,063	-4.2%	217,514	552

Source: United States Census Bureau. 2023. American Community Survey 5-year Estimates. Available online at https://data.census.gov/. Accessed July 29, 2025. Population projections based on 2013-2023 growth rate.

(D) Cultural and Archaeological Resources

(D)(1): A constraint map provided as **Figure 4-1** provides a map at 1:24,000 scale of water recreation areas, trails, scenic rivers and byways, landmarks, historic sites, religious areas, archaeological areas, and other significant cultural resources within 1,000 feet of the proposed electric transmission line.

(D)(2): Cultural resources studies of the Project area were conducted on behalf of ATSI. These studies include a background records check and literature review using data files from the Ohio Historic Preservation Office (OHPO) for both the Proposed and alternative routes. Additionally, a Phase 1 archeological reconnaissance and aboveground (architectural) resource survey were completed for the Proposed Route. Both reports will be submitted separately to OPSB. These reports were provided to the

OHPO for review. In letters dated June 2, 2025 and June 9, 2025, the State Historic Preservation Office (SHPO) responded concurring that construction of the Proposed Route would have no effect on significant archaeological resources and no effect on historic properties (**Appendix 8-6**).

(D)(3): Archival research considered a one-mile buffer around both the Proposed and alternate routes, to locate previously-identified cultural resources and to provide information on the probability of identifying cultural resources as part of this Project. This review included an examination of the Ohio Archaeological Inventory (OAI), the Ohio Historic Inventory (OHI), Determination of Eligibility (DOE) files, the National Register of Historic Places (NRHP), historic cemeteries, historic bridges, National Historic Landmarks (NHLs), and previous cultural resources surveys on-file with the OHPO. This archival research indicated the following for the Proposed and alternative routes.

Cultural resource studies to date have involved background research utilizing data files from the OHPO online mapping system (see section above) as well as a Phase 1 archeological reconnaissance and aboveground (architectural) survey of the Proposed Route.

Between July and December 2024, the Phase 1 archeological reconnaissance and aboveground architectural surveys were completed for the Proposed Route. The Phase 1 archeological reconnaissance survey included the examination of all potential areas of proposed ground disturbance including the Proposed route transmission line corridor, temporary access roads, and expansion of the existing Riverbend Substation. The Phase 1 aboveground (architectural) investigations considered a potential viewshed buffer of approximately 500-foot around all proposed aboveground infrastructure.

The Phase I archaeological survey involved a visual assessment of the ROW and access road locations, as well as excavation of 114 shovel test pits. This investigation identified five historic period archaeological sites, all of which are located north of the Mahoning River. No further archaeological investigations are recommended for any of these sites, either because the site has limited research potential, or because no ground disturbance would occur at the site. The Phase 1 Archaeological Report was provided to the OHPO, which responded in a letter on June 2, 2025 stating that there would be no effect on significant archaeological resources and that no further archaeological investigations are warranted.

A Phase I architectural history investigation was conducted for the Project in July 2024. This investigation identified 10 intact inventoried historic resources, of which one was previously determined/recommended as potentially eligible for listing on the NRHP, three of which were determined/recommended not eligible, and six which have not been formally assessed for NRHP eligibility. Based on the characteristics of the Proposed Route, and due to the presence of screening elements of the modern landscape and/or presence of existing infrastructure similar in size and scale as the proposed Project, this report determines the Project will not result in any effect to these resources. Additionally, this investigation identified 145 previously undocumented aboveground historic resources within the Project Area. These resources primarily consist of residential dwellings and commercial and industrial buildings, all of which are recommended as not individually eligible for the NRHP. In a letter dated June 9, 2025, the SHPO responded concurring that construction of the Proposed Route would have no effect on historic properties.

(D)(4) (a-b): There are no recreational trails, scenic rivers, or scenic routes or byways within 1,000 feet of the Proposed Route. However, there are local parks including Lincoln Park and other public places including Wean Park (Youngstown Amphitheater) that are located within range of the Project; but not crossed by the Proposed Route's ROW. Therefore, given the location of the Project Area and the surrounding land uses, recreation and scenic areas are not anticipated to be impacted.

(D)(5): Based on the results of the cultural resources investigations and consultation with the OHPO, impacts to known historic properties or significant archaeological sites are not anticipated. An

Unanticipated Discovery Plan has been developed, detailing the necessary protocols to be implemented in the event that cultural resources are encountered during construction of the Proposed Route.

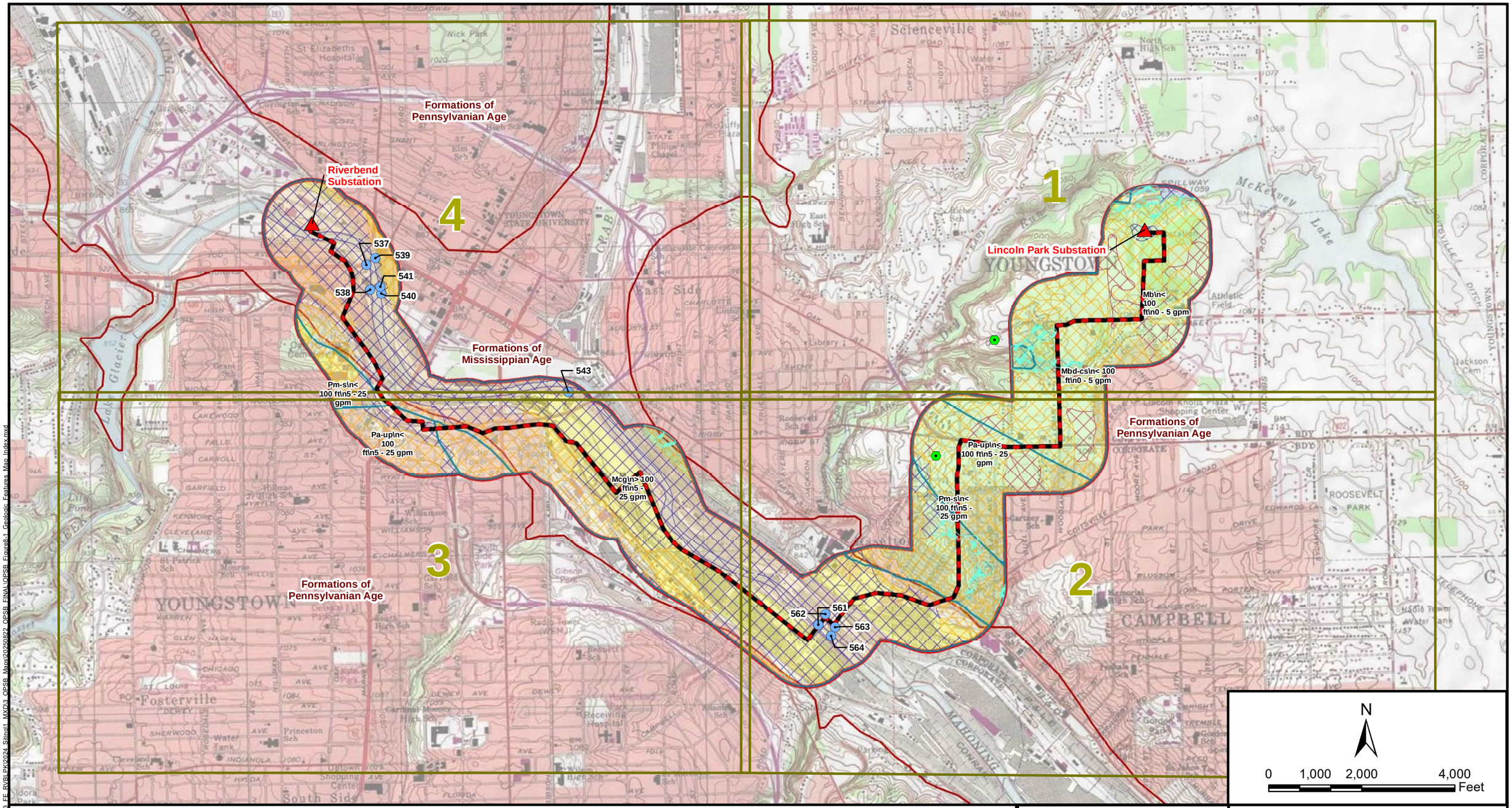
(D)(6) (a-g): The viewshed along the Proposed Route from residences and potentially sensitive vantage points may be altered by the presence of the transmission line. The Project area is characterized by a variable terrain, woodlots, wetlands, floodplains, industrial lots, and suburban and urban residential properties. Many major overhead transmission lines, distribution lines, large industrial and commercial buildings, and railroads extend through or adjacent to the proposed boundaries of the Proposed Route. Due to both intervening wood lots in the eastern portion of these routes and existing infrastructure of the remaining portions, the routes were identified as not having a significant impact on the overall visual landscape. At select locations where tree clearing may be required, visual impacts may be greater. Furthermore, a Phase 1 architectural history review examined the Project's potential effects to above-ground historic resources of the Proposed and OHPO concluded that the Project activities would not adversely affect historic resources or impact their viewsheds, largely due to the existing and surrounding infrastructure is already developed with similar type of utilities (distribution, other transmission lines) or urbanized developments.

To the extent that the construction of the proposed transmission line has any effect on the existing visual aesthetics of the area, the impacts will result primarily from the introduction of a new, man-made element in the landscape. The degree of visual impact of any new, man-made element will vary with the viewer and the setting, though such impacts can be partially evaluated by comparing the amount of contrast resulting from the construction of the new element with the existing landscape. For example, if the transmission line were screened from view, then the aesthetic impact would be comparatively less than if the transmission line were placed in an existing, open area, depending on the viewer. In areas where the transmission line follows the route of similar facilities, the aesthetic impact would be further reduced because it would create only an incremental change in the existing visual setting.

The ability to minimize the visual impacts of the proposed transmission line is constrained by engineering requirements, distribution lines and modern transportation infrastructure.

(E) Agricultural Districts and Potential Impacts to Agricultural Land.

(E)(1)-(3): This section is inapplicable as no agricultural land exists in the Project area. The Mahoning County Auditor was contacted in July 2025 to obtain information on current Agricultural District parcel records. As of July 25, 2025, there were no Agricultural District parcels in tax districts 44, 46, 53, and 58 (City of Campbell and City of Youngstown). In addition, there are no areas zoned as agricultural within 1,000 feet of the Proposed Route (**Figure 8-3**). One parcel located north of McCartney Road and within 1,000 feet of the Proposed Route has a CAUV application pending; however, this parcel is not anticipated to be impacted by the Project. Due to the lack of agricultural areas within the footprint of the Project, no tile drains and/or agricultural fields will be impacted by the Project.



LEGEND:

- Existing Substation
- ODNR Water Wells
- Existing Oil and Gas Wells
- Proposed Route
- 2,000-foot Corridor
- Underground Mine Extents
- Slopes Greater than 12 Percent
- Aquifer Boundary
- Geological Provinces/Formations
- Sheet Index Boundary

Soil Hazard Areas

- Moderate
- Not rated
- Severe
- Slight
- Very severe

Groundwater Vulnerability Index ODNR

- NR
- 1 - 79
- 80 - 99
- 100 - 119
- 120 - 139
- 140 - 159
- 160 - 179
- 180 - 199
- 200 - 250

Source: BMCD, ESRI, ARCGIS Online World Street Map

ATSI

FIGURE 8-1
GEOLOGIC FEATURE MAP INDEX

YOUNGSTOWN 138KV REINFORCEMENT
TRANSMISSION LINE

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MAHONING COUNTY

YOUNGSTOWN

US-Hwy-422

Formations of Mississippian Age

Formations of Pennsylvanian Age

Mb\n
<100ft\n
0 - 5 gpm

Mbd-cs\n< 100 ft\n0 - 5 gpm

Pa-upln
<100 ft\n
5 - 25 gpm

Lincoln Park Substation

N

0 500 1,000 2,000 Feet

LEGEND:

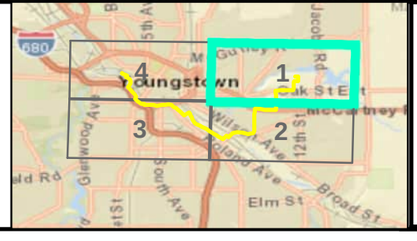
- Existing Substation
- Existing Oil and Gas Wells
- Proposed Route
- 10-ft Contours
- 2,000-foot Corridor
- Township Boundary
- City or Town
- County Boundary
- Slopes Greater than 12 Percent
- Aquifer Boundary
- Geological Provinces/Formations

Soil Hazard Areas

- Moderate
- Not rated
- Severe
- Slight
- Very severe

Groundwater Vulnerability Index ODNR

- NR
- 1 - 79
- 80 - 99
- 100 - 119
- 120 - 139
- 140 - 159
- 160 - 179
- 180 - 199
- 200 - 250



Source: BMCD, ESRI, ARCGIS Online World Street Map

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FIGURE 8-1
GEOLOGIC FEATURE MAP

YOUNGSTOWN 138KV REINFORCEMENT TRANSMISSION LINE

PAGE 1 OF 4

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YOUNGSTOWN

MAHONING COUNTY

CAMPBELL

Oak St

US Hwy 422/McCartney Rd

S Wilson Ave

Boardman-Poland Bypass

Pm-s\n
< 100 ftIn
5- 25 gpm

Pm-s
< 100 ft
5 - 25 gpm

Pm-s
< 100 ft
5 - 25 gpm

Formations of Pennsylvanian Age

Formations of Mississippian Age

Formations of Pennsylvanian Age

561

562

563

564

N

0 500 1,000 2,000 Feet

LEGEND:

- Existing Substation
- Existing Oil and Gas Wells
- Proposed Route
- 10-ft Contours
- 2,000-foot Corridor
- Township Boundary
- City or Town
- County Boundary
- Slopes Greater than 12 Percent
- Aquifer Boundary
- Geological Provinces/Formations

Soil Hazard Areas

- Moderate
- Not rated
- Severe
- Slight
- Very severe

Groundwater Vulnerability Index ODNR

- NR
- 1 - 79
- 80 - 99
- 100 - 119
- 120 - 139
- 140 - 159
- 160 - 179
- 180 - 199
- 200 - 250

Source: BMCD, ESRI, ARCGIS Online World Street Map

ATSI

FIGURE 8-1
GEOLOGIC FEATURE MAP

YOUNGSTOWN 138KV REINFORCEMENT TRANSMISSION LINE

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> 100ft
5 - 25 gpm

Pm-s\n
< 100 ft\n5
- 25 gpm

Pa-up\n
< 100 ft\n5
- 25 gpm

Mcg\n
> 100
5 -25 gpm

Madison Av Expy

Market St

South Ave

SWilsonAve9

State Rte 7\ison Ave

Delason Ave

W Indianola Ave

US Hwy 62

I- 680

Boardman Pkwy

MAHONING COUNTY

YOUNGSTOWN

YOU

Formations of Pennsylvanian Age

Formations of Mississippian Age

Formations of Pennsylvanian Age

543

N

0 500 1,000 2,000 Feet

LEGEND:

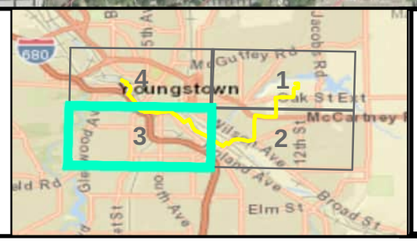
- Existing Substation
- Existing Oil and Gas Wells
- Proposed Route
- 10-ft Contours
- 2,000-foot Corridor
- Township Boundary
- City or Town
- County Boundary
- Slopes Greater than 12 Percent
- Aquifer Boundary
- Geological Provinces/Formations

Soil Hazard Areas

- Moderate
- Not rated
- Severe
- Slight
- Very severe

Groundwater Vulnerability Index ODNR

- NR
- 1 - 79
- 80 - 99
- 100 - 119
- 120 - 139
- 140 - 159
- 160 - 179
- 180 - 199
- 200 - 250



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FIGURE 8-1
GEOLOGIC FEATURE MAP

YOUNGSTOWN 138KV REINFORCEMENT
TRANSMISSION LINE

PAGE 3 OF 4

Source: BMCD, ESRI, ARCGIS Online World Street Map

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MAHONING COUNTY

YOUNGSTOWN

Riverbend Substation

Formations of Mississippian Age

Formations of Pennsylvanian Age

Mcg
>100ft
5 - 25 gpm

Wirt St
Martin Luther King Jr Blvd
Madison Av Expy
W Federal St
State Rte 193
US Hwy 62
US Hwy 422
McGuffey Rd
Albert St
Wick Ave
W Rayen Ave
E Rayen Ave
State Rte 7
N Lane Ave
State Rte 289
Federal Plaza Central
Oak St
N Hine St
Market St
Himrod Ave
Wilson Ave
I-680

539 537 541 538 540 543

LEGEND:

- Existing Substation
- Existing Oil and Gas Wells
- Proposed Route
- 10-ft Contours
- 2,000-foot Corridor
- Township Boundary
- City or Town
- County Boundary
- Slopes Greater than 12 Percent
- Aquifer Boundary
- Geological Provinces/Formations

Soil Hazard Areas

- Moderate
- Not rated
- Severe
- Slight
- Very severe

Groundwater Vulnerability Index ODNR

- NR
- 1 - 79
- 80 - 99
- 100 - 119
- 120 - 139
- 140 - 159
- 160 - 179
- 180 - 199
- 200 - 250

N

0 500 1,000 2,000 Feet

Source: BMCD, ESRI, ARCGIS Online World Street Map

ATSI

FIGURE 8-1
GEOLOGIC FEATURE MAP

YOUNGSTOWN 138KV REINFORCEMENT
TRANSMISSION LINE

PAGE 4 OF 4

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Riverbend Substation

Lincoln Park Substation

N

0 1,000 2,000 4,000 Feet

LEGEND:

- Existing Substation
- Proposed Route
- 2,000-foot Corridor

Vegetative Communities

- Forest
- Landscaped/Maintained
- Old Field/Scrub-Shrub
- Stream/Wetlands
- Urban

Source: BMCD, ESRI, ARCGIS Online World Street Map

ATSI

FIGURE 8-2
VEGETATIVE COVER MAP

YOUNGSTOWN 138KV REINFORCEMENT
TRANSMISSION LINE

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Riverbend Substation

Lincoln Park Substation

N

0 1,000 2,000 4,000 Feet

LEGEND:

- Existing Substation
- Proposed Route
- 2,000-foot Corridor

Land Use Zoning

- Commercial
- Government or Public Owned or Open Space
- Industrial
- Residential

ATSI

FIGURE 8-3
LANDUSE AND ZONING MAP

YOUNGSTOWN 138KV REINFORCEMENT
TRANSMISSION LINE

Source: BMCD, ESRI, ARCGIS Online World Street Map

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Riverbend Substation
Lincoln Park Substation
Youngstown Foundation Ampitheater
Covelli Centre
Wean Park
Mahoning River
Crab Creek
East Branch Crab Creek
Dry Run
McKelvey Lake
Coitsville Ditch
Oak Street Park
Lincoln Park
Oakland Field
Youngstown Playground
Southside Park
Gibson Field
Pine Hollow Creek
Lake Glacier
Mill Creek
Lily Pond
Bears Den Run
Lake Cohasset
1
2
3
4
5
6
7
8
9
10
11
12
N
0 1,000 2,000 4,000 Feet

LEGEND:

- Existing Substation
- Proposed Route
- Stream (National Hydrography Dataset)
- Water Bodies (National Hydrography Dataset)
- Slopes Greater than 12 Percent
- Sensitive Land Use/Parks
- NFHL 100-Year Floodplain (FEMA)
- NFHL Floodway (FEMA)
- 2,000-foot Corridor
- Right-of-Way 65ft Project Corridor
- Sheet Index Boundary

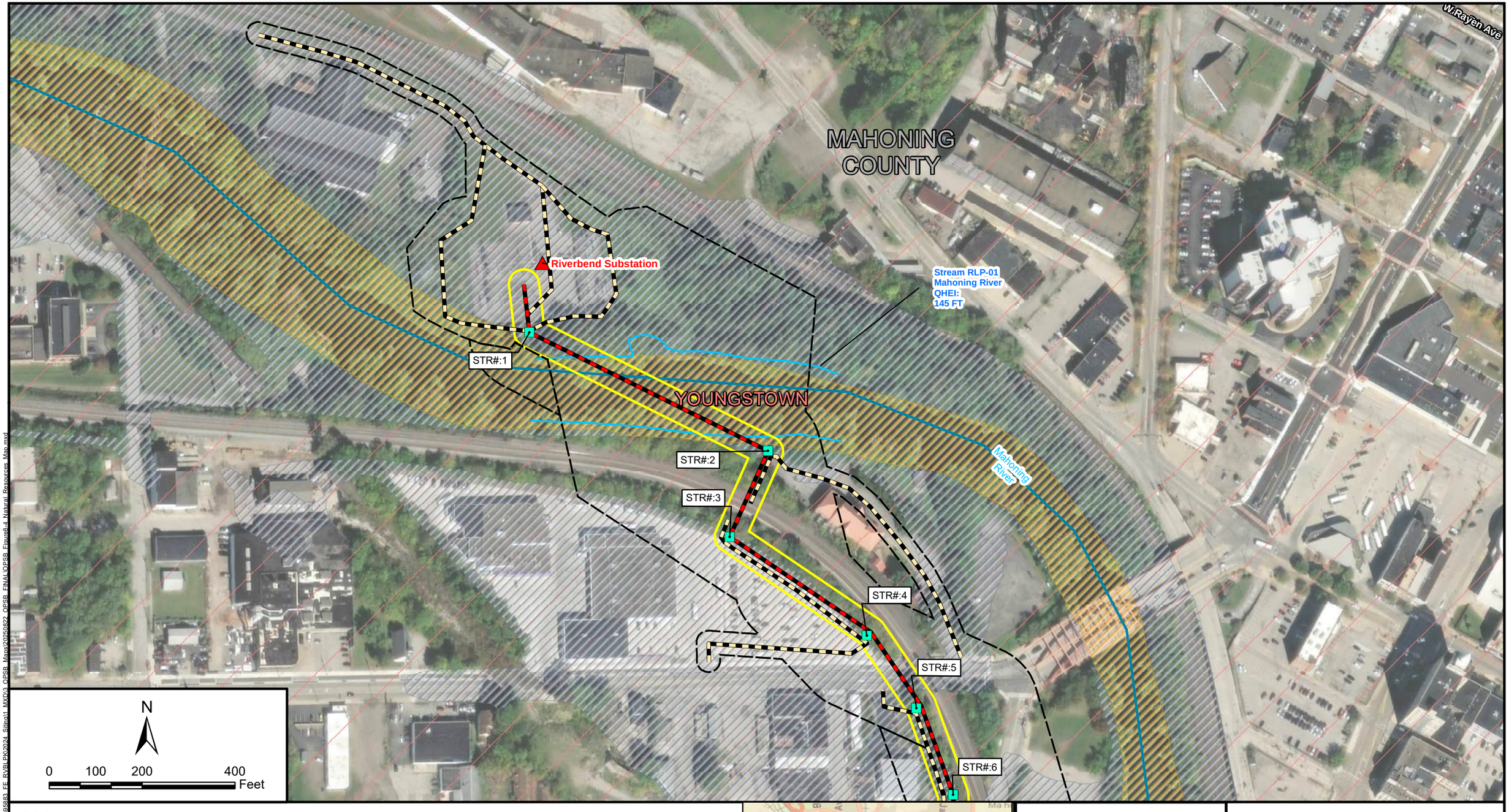
Source: BMCD, ESRI, ARCGIS Online World Street Map

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FIGURE 8-4
NATURAL RESOURCES MAP INDEX

YOUNGSTOWN 138KV REINFORCEMENT
TRANSMISSION LINE

X:\DCS\Projects\IMS\FIRSTENERGY\OHIO Projects\60696883 FE RVBLPK\2024 Siting\1 MXD\3 OPSB Maps\20250822 OPSB FINAL\OPSB Figure 8-4 Natural Resources Index.mxd



LEGEND:

- Existing Substation
- Structures
- Preliminary Proposed Access Roads
- Proposed Route
- Delineated Stream
- Stream (National Hydrography Dataset)
- Delineated Wetland
- Water Bodies (National Hydrography Dataset)
- Slopes Greater than 12 Percent
- Sensitive Land Use/Parks
- NFHL 100-Year Floodplain (FEMA)
- NFHL Floodway (FEMA)
- Township Boundary
- City or Town
- County Boundary
- Right-of-Way 65ft Project Corridor
- Environmental Study Area



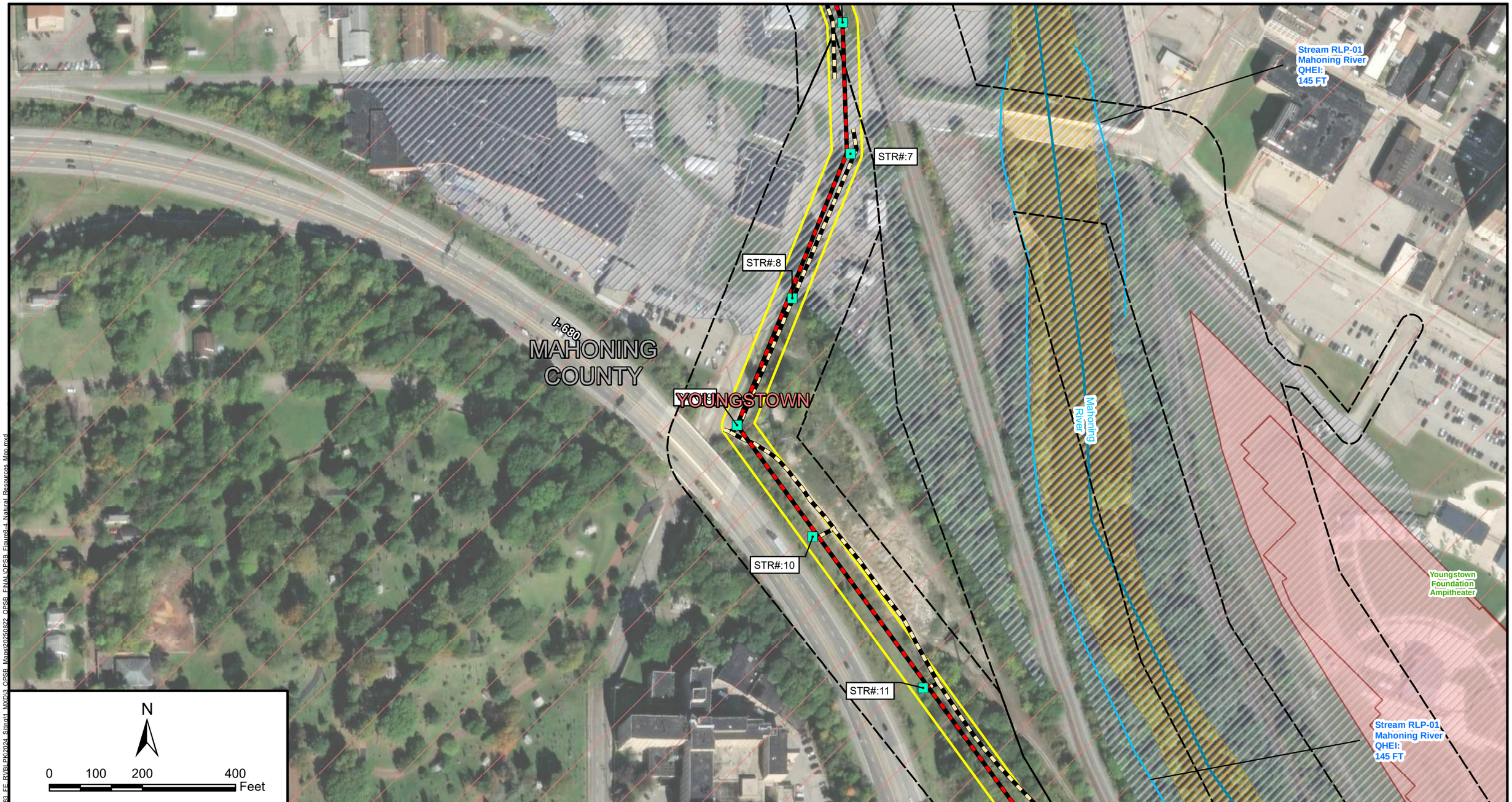
Source: BMCD, ESRI, ARCGIS Online World Street Map

ATSI

FIGURE 8-4
NATURAL RESOURCES MAP

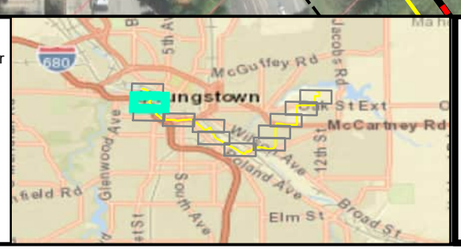
YOUNGSTOWN 138KV REINFORCEMENT
TRANSMISSION LINE

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LEGEND:

- Existing Substation
- Structures
- Preliminary Proposed Access Roads
- Proposed Route
- Delineated Stream
- Stream (National Hydrography Dataset)
- Delineated Wetland
- Water Bodies (National Hydrography Dataset)
- Slopes Greater than 12 Percent
- Sensitive Land Use/Parks
- NFHL 100-Year Floodplain (FEMA)
- NFHL Floodway (FEMA)
- Township Boundary
- City or Town
- County Boundary
- Right-of-Way 65ft Project Corridor
- Environmental Study Area



ATSI

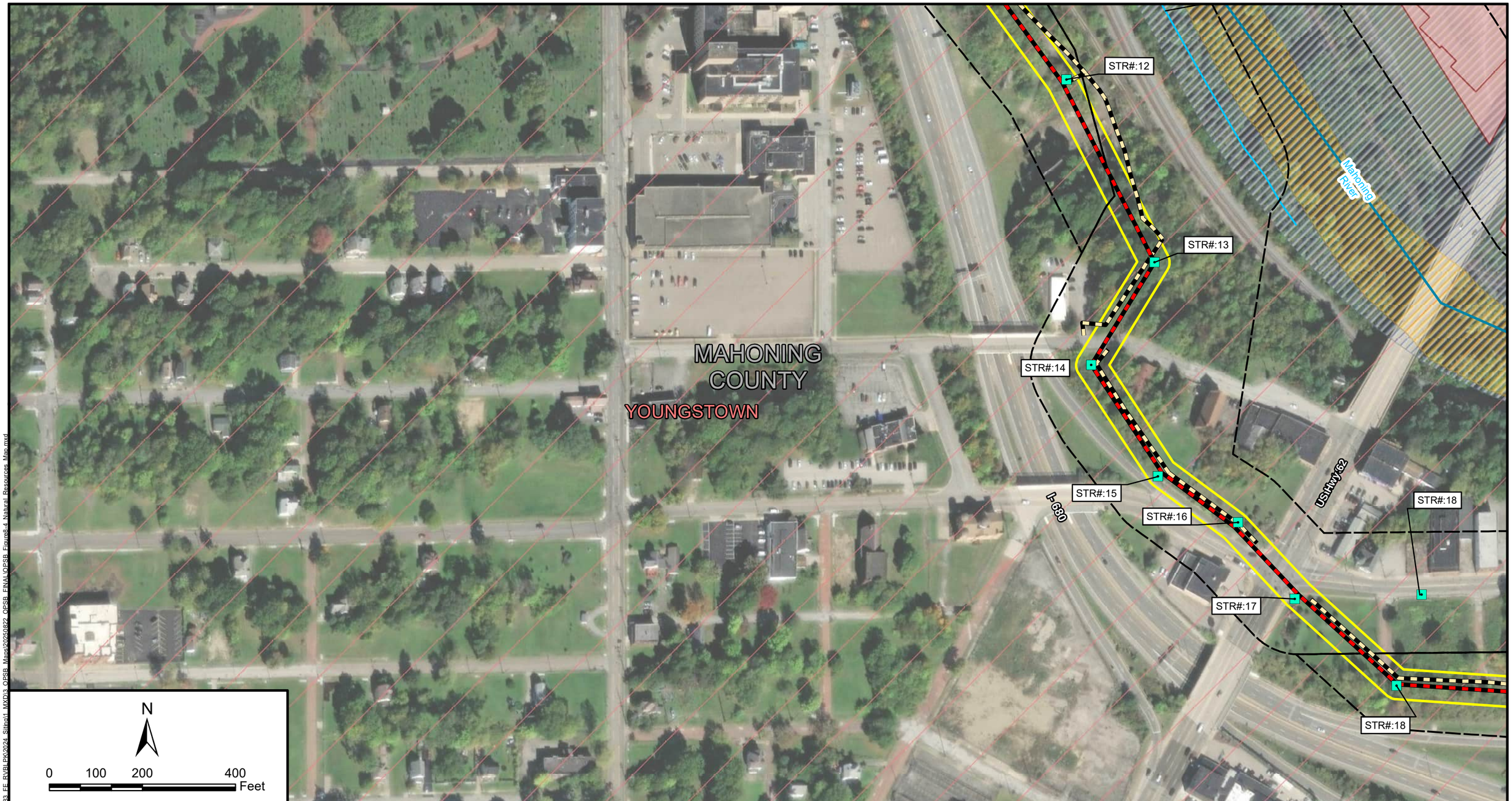
FIGURE 8-4
NATURAL RESOURCES MAP

YOUNGSTOWN 138KV REINFORCEMENT
TRANSMISSION LINE

PAGE 2 OF 12

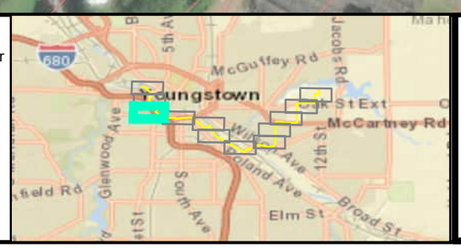
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LEGEND:

- Existing Substation
- Structures
- Preliminary Proposed Access Roads
- Proposed Route
- Delineated Stream
- Stream (National Hydrography Dataset)
- Delineated Wetland
- Water Bodies (National Hydrography Dataset)
- Slopes Greater than 12 Percent
- Sensitive Land Use/Parks
- NFHL 100-Year Floodplain (FEMA)
- NFHL Floodway (FEMA)
- Township Boundary
- City or Town
- County Boundary
- Right-of-Way 65ft Project Corridor
- Environmental Study Area



ATSI

FIGURE 8-4
NATURAL RESOURCES MAP

YOUNGSTOWN 138KV REINFORCEMENT
TRANSMISSION LINE

Source: BMCD, ESRI, ARCGIS Online World Street Map

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Mahoning River

STR#:19

STR#:19

MAHONING COUNTY

YOUNGSTOWN

State Rte 7

Madison Av Expy

STR#:21

STR#:22

STR#:23

STR#:24

STR#:25

STR#:26

STR#:28

STR#:29

STR#:20

Stream RLP-28
UNT to Mahoning River
HHEI: 26
2 FT

I-680

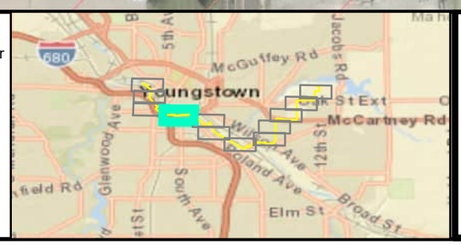
South Ave

N

0 100 200 400 Feet

LEGEND:

- Existing Substation
- Structures
- Preliminary Proposed Access Roads
- Proposed Route
- Delineated Stream
- Stream (National Hydrography Dataset)
- Delineated Wetland
- Water Bodies (National Hydrography Dataset)
- Slopes Greater than 12 Percent
- Sensitive Land Use/Parks
- NFHL 100-Year Floodplain (FEMA)
- NFHL Floodway (FEMA)
- Township Boundary
- City or Town
- County Boundary
- Right-of-Way 65ft Project Corridor
- Environmental Study Area



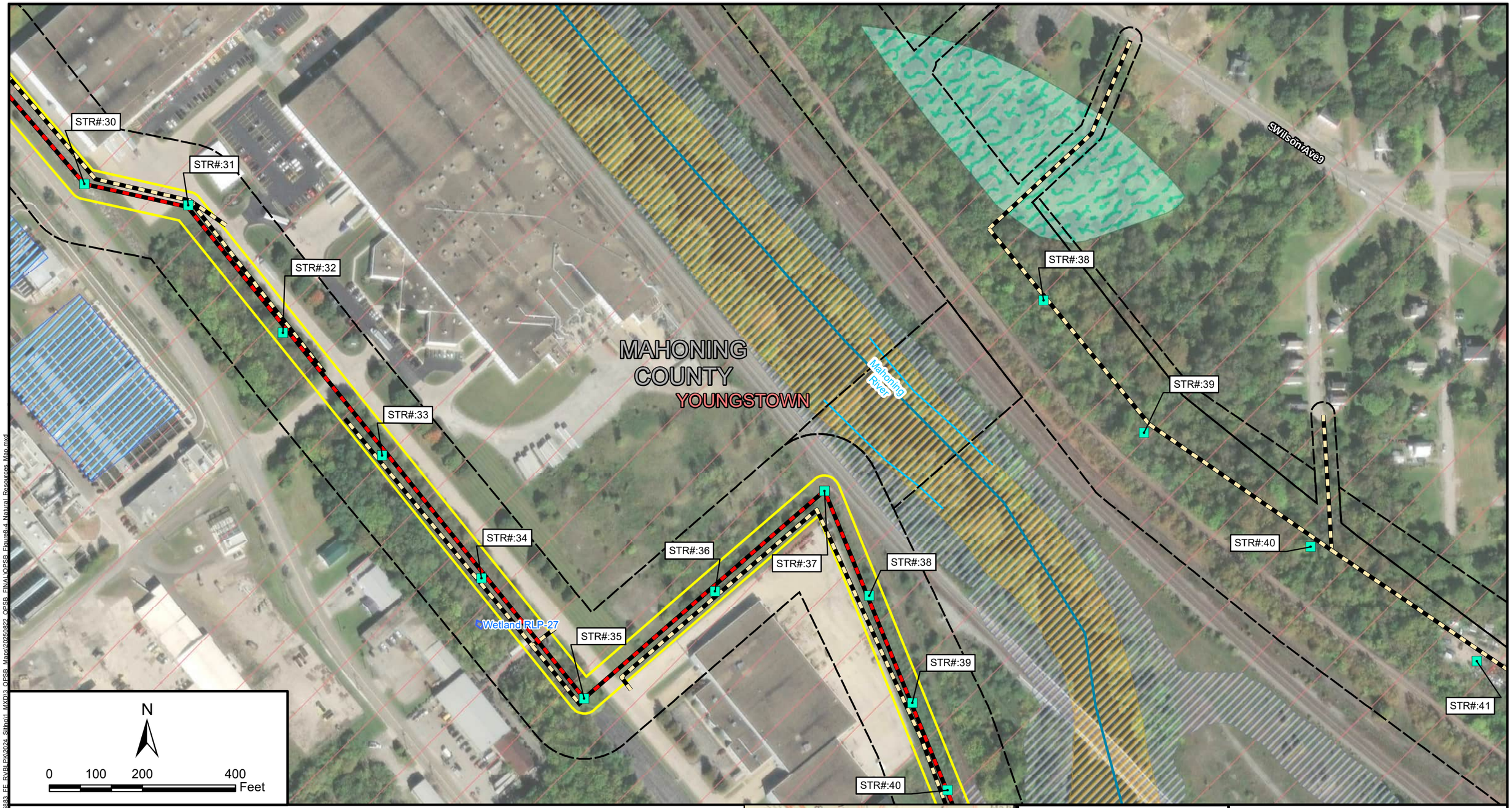
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FIGURE 8-4
NATURAL RESOURCES MAP

YOUNGSTOWN 138KV REINFORCEMENT TRANSMISSION LINE

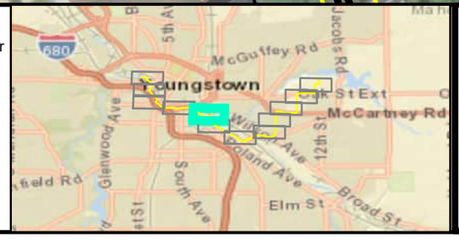
Source: BMCD, ESRI, ARCGIS Online World Street Map

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LEGEND:

- Existing Substation
- Structures
- Preliminary Proposed Access Roads
- Proposed Route
- Delineated Stream
- Stream (National Hydrography Dataset)
- Delineated Wetland
- Water Bodies (National Hydrography Dataset)
- Slopes Greater than 12 Percent
- Sensitive Land Use/Parks
- NFHL 100-Year Floodplain (FEMA)
- NFHL Floodway (FEMA)
- Township Boundary
- City or Town
- County Boundary
- Right-of-Way 65ft Project Corridor
- Environmental Study Area



ATSI

FIGURE 8-4
NATURAL RESOURCES MAP

YOUNGSTOWN 138KV REINFORCEMENT
TRANSMISSION LINE

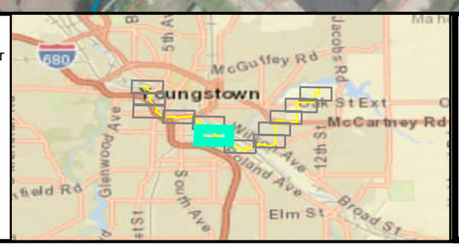
Source: BMCD, ESRI, ARCGIS Online World Street Map

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STR#:40
STR#:41
STR#:42
STR#:43
STR#:44
STR#:45
STR#:46
STR#:47
STR#:48
STR#:42
Stream RLP-01
Mahoning River
QHEI:
145 FT
Stream RLP-03
UNT to Mahoning River
HHEI: 25
0.5 FT
Mahoning River
MAHONING
COUNTY
YOUNGSTOWN
Wetland RLP-034

N
0 100 200 400
Feet

LEGEND:
- Existing Substation
- Structures
- Preliminary Proposed Access Roads
- Proposed Route
- Delineated Stream
- Stream (National Hydrography Dataset)
- Delineated Wetland
- Water Bodies (National Hydrography Dataset)
- Slopes Greater than 12 Percent
- Sensitive Land Use/Parks
- NFHL 100-Year Floodplain (FEMA)
- NFHL Floodway (FEMA)
- Township Boundary
- City or Town
- County Boundary
- Right-of-Way 65ft Project Corridor
- Environmental Study Area



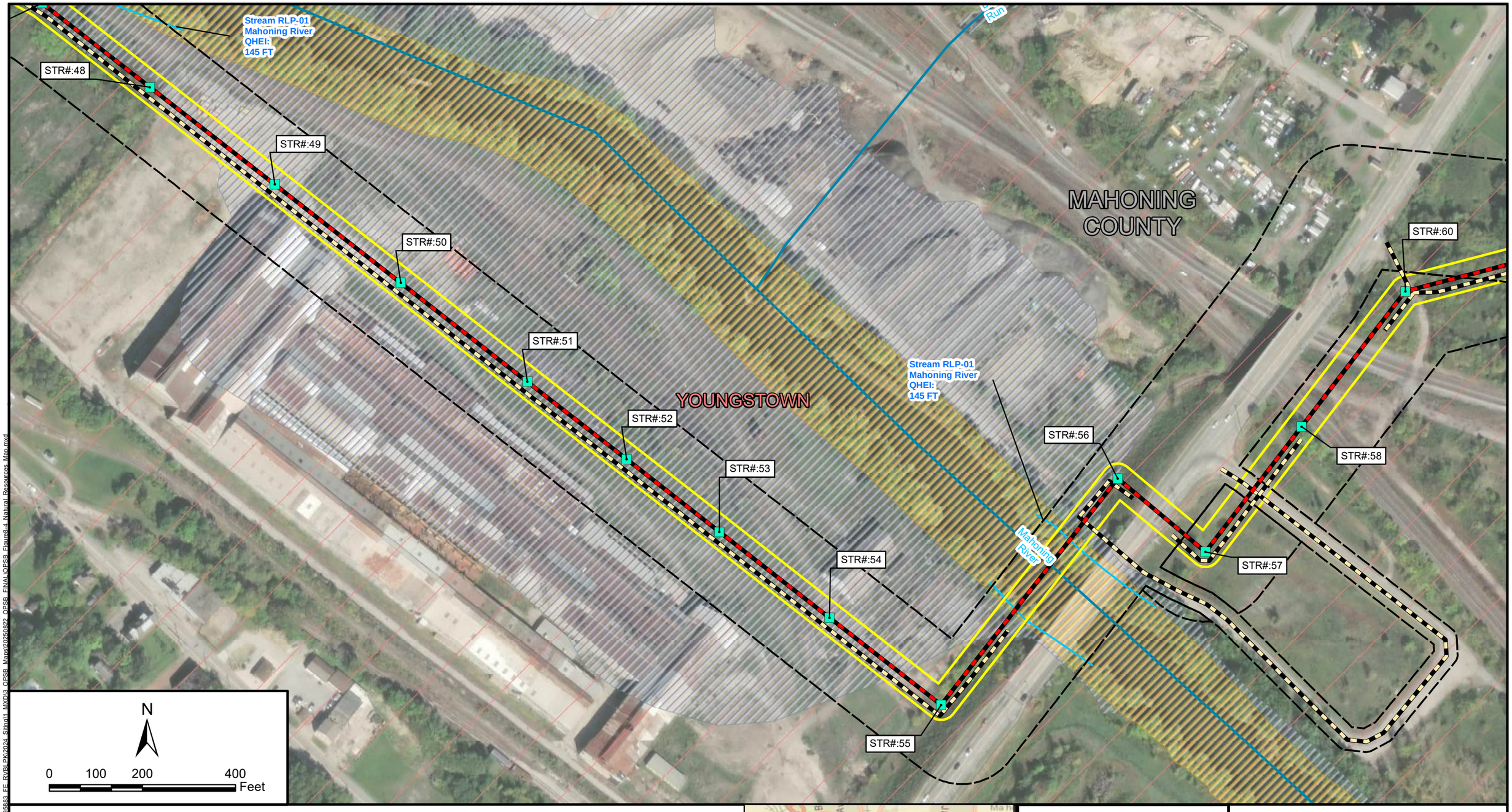
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FIGURE 8-4
NATURAL RESOURCES MAP

YOUNGSTOWN 138KV REINFORCEMENT
TRANSMISSION LINE

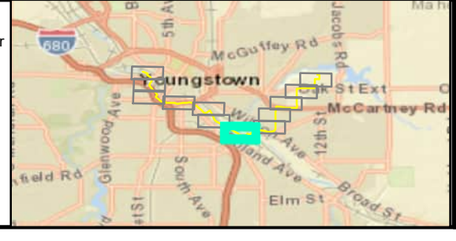
Source: BMCD, ESRI, ARCGIS Online World Street Map

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LEGEND:

- Existing Substation
- Structures
- Preliminary Proposed Access Roads
- Proposed Route
- Delineated Stream
- Stream (National Hydrography Dataset)
- Delineated Wetland
- Water Bodies (National Hydrography Dataset)
- Slopes Greater than 12 Percent
- Sensitive Land Use/Parks
- NFHL 100-Year Floodplain (FEMA)
- NFHL Floodway (FEMA)
- Township Boundary
- City or Town
- County Boundary
- Right-of-Way 65ft Project Corridor
- Environmental Study Area



Source: BMCD, ESRI, ARCGIS Online World Street Map

ATSI

FIGURE 8-4
NATURAL RESOURCES MAP

YOUNGSTOWN 138KV REINFORCEMENT
TRANSMISSION LINE

X:\DCS\Projects\IMS\FIRSTENERGY\OHIO_Projects\60696583_FE_RVRLRK2024_Sitino\1_MXD\2_OPSB_Maps\20250822_OPSB_FINAL\OPSB_Figures\8-4_Natural Resources_Main.mxd

Dry Run

Youngstown Playground

YOUNGSTOWN

URBAN TOWNSHIP

COITSVILLE TOWNSHIP

MAHONING COUNTY

CAMPBELL

SWilsonAve9

STR#:60

STR#:61

STR#:62

STR#:63

STR#:64

STR#:65

STR#:66

STR#:67

STR#:68

Stream RLP-26
UNT to Mahoning River
HHEI: 26
3 FT

Stream RLP-27
UNT to Mahoning River
HHEI: 28
3 FT

Wetland RLP-23

Wetland RLP-24

Wetland RLP-25

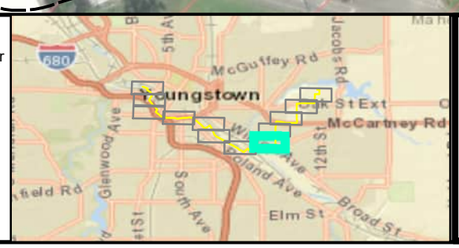
Wetland RLP-26

N

0 100 200 400 Feet

LEGEND:

- Existing Substation
- Structures
- Preliminary Proposed Access Roads
- Proposed Route
- Delineated Stream
- Stream (National Hydrography Dataset)
- Delineated Wetland
- Water Bodies (National Hydrography Dataset)
- Slopes Greater than 12 Percent
- Sensitive Land Use/Parks
- NFHL 100-Year Floodplain (FEMA)
- NFHL Floodway (FEMA)
- Township Boundary
- City or Town
- County Boundary
- Right-of-Way 65ft Project Corridor
- Environmental Study Area



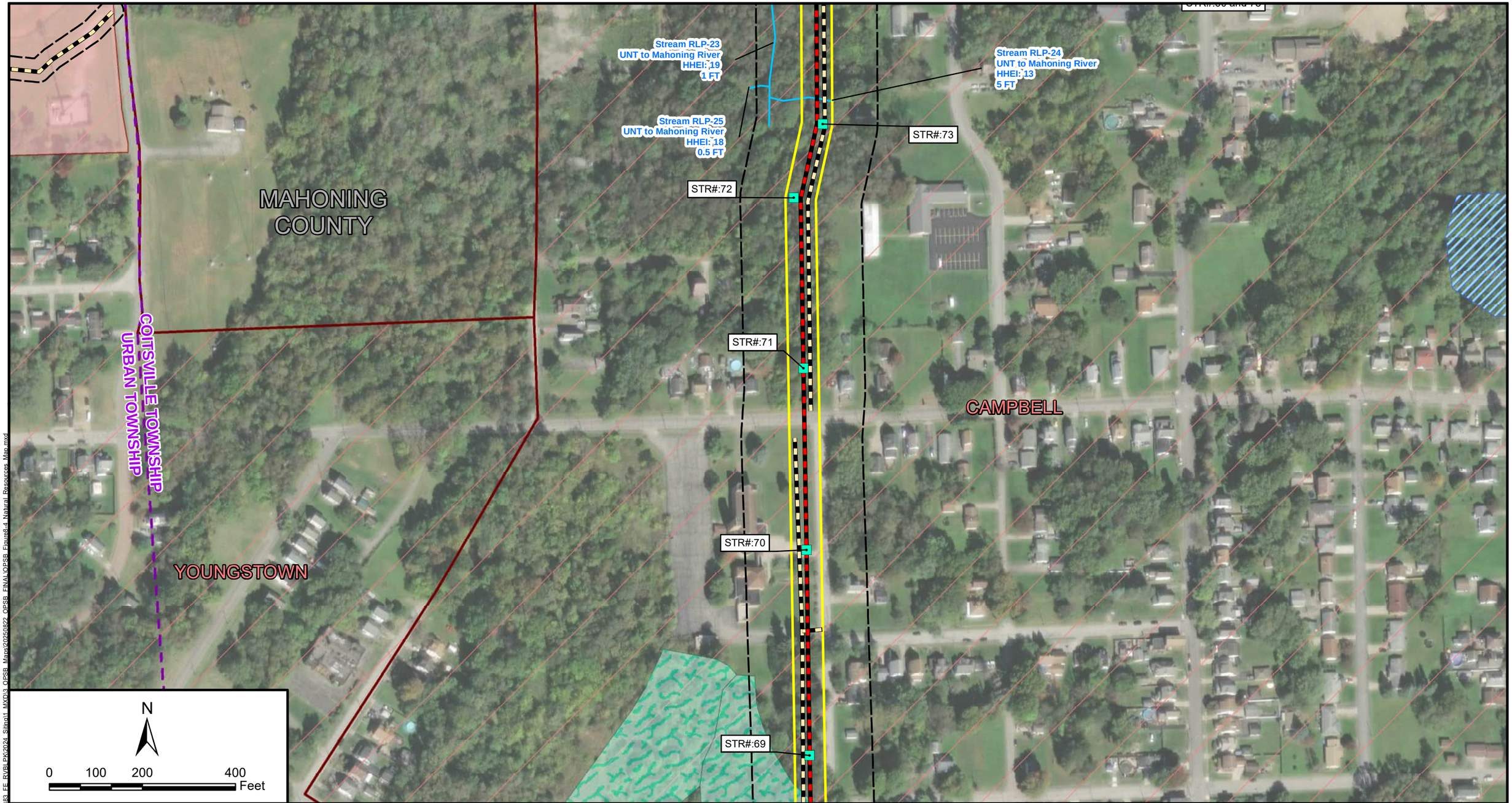
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FIGURE 8-4
NATURAL RESOURCES MAP

YOUNGSTOWN 138KV REINFORCEMENT TRANSMISSION LINE

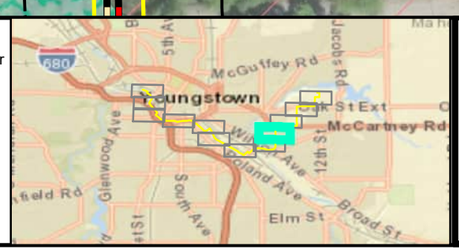
Source: BMCD, ESRI, ARCGIS Online World Street Map

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LEGEND:

- Existing Substation
- Structures
- Preliminary Proposed Access Roads
- Proposed Route
- Delineated Stream
- Stream (National Hydrography Dataset)
- Delineated Wetland
- Water Bodies (National Hydrography Dataset)
- Slopes Greater than 12 Percent
- Sensitive Land Use/Parks
- NFHL 100-Year Floodplain (FEMA)
- NFHL Floodway (FEMA)
- Township Boundary
- City or Town
- County Boundary
- Right-of-Way 65ft Project Corridor
- Environmental Study Area



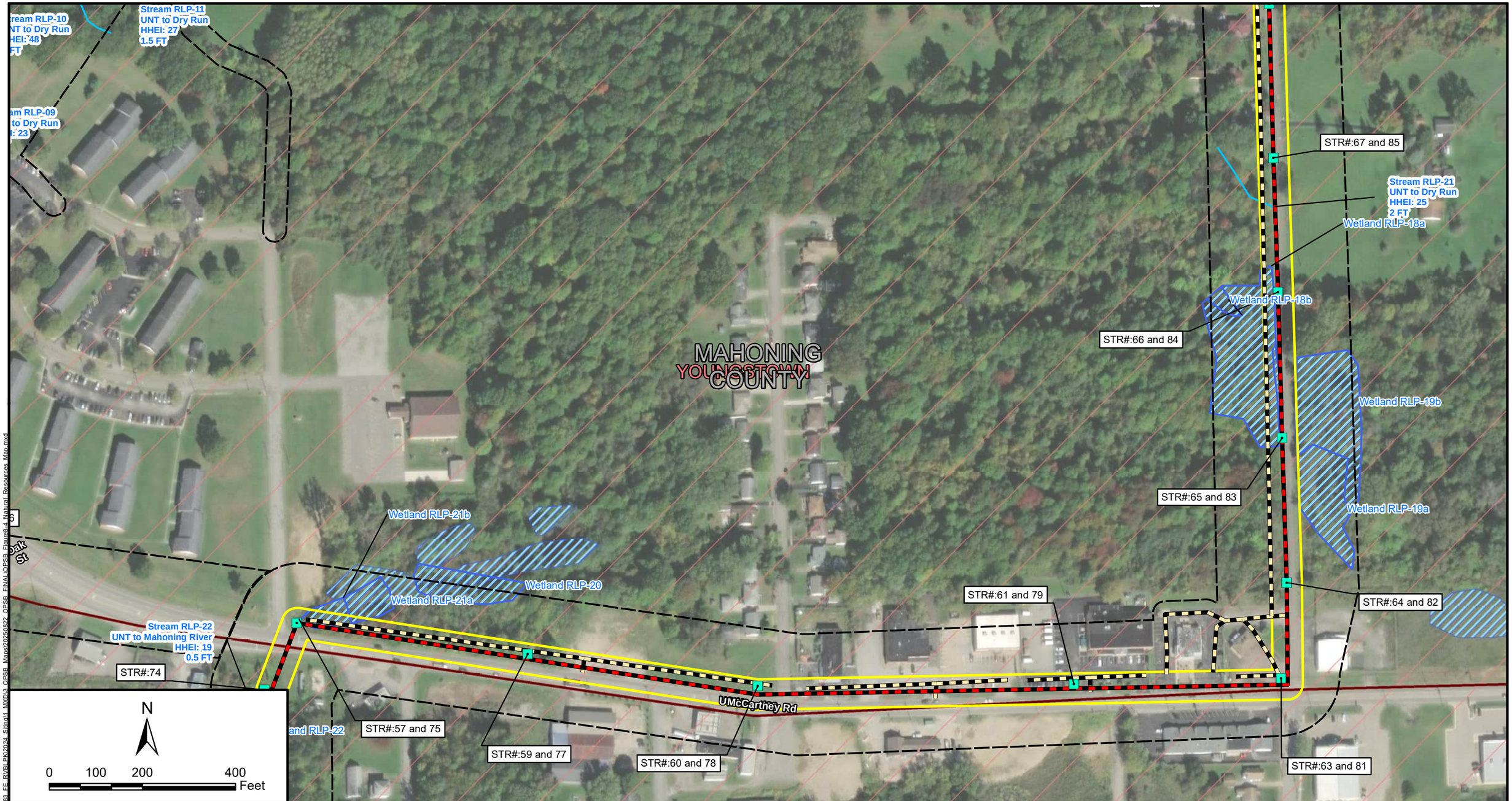
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FIGURE 8-4
NATURAL RESOURCES MAP

YOUNGSTOWN 138KV REINFORCEMENT
TRANSMISSION LINE

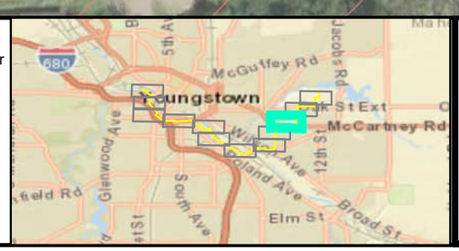
Source: BMCD, ESRI, ARCGIS Online World Street Map

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LEGEND:

- Existing Substation
- Structures
- Preliminary Proposed Access Roads
- Proposed Route
- Delineated Stream
- Stream (National Hydrography Dataset)
- Delineated Wetland
- Water Bodies (National Hydrography Dataset)
- Slopes Greater than 12 Percent
- Sensitive Land Use/Parks
- NFHL 100-Year Floodplain (FEMA)
- NFHL Floodway (FEMA)
- Township Boundary
- City or Town
- County Boundary
- Right-of-Way 65ft Project Corridor
- Environmental Study Area



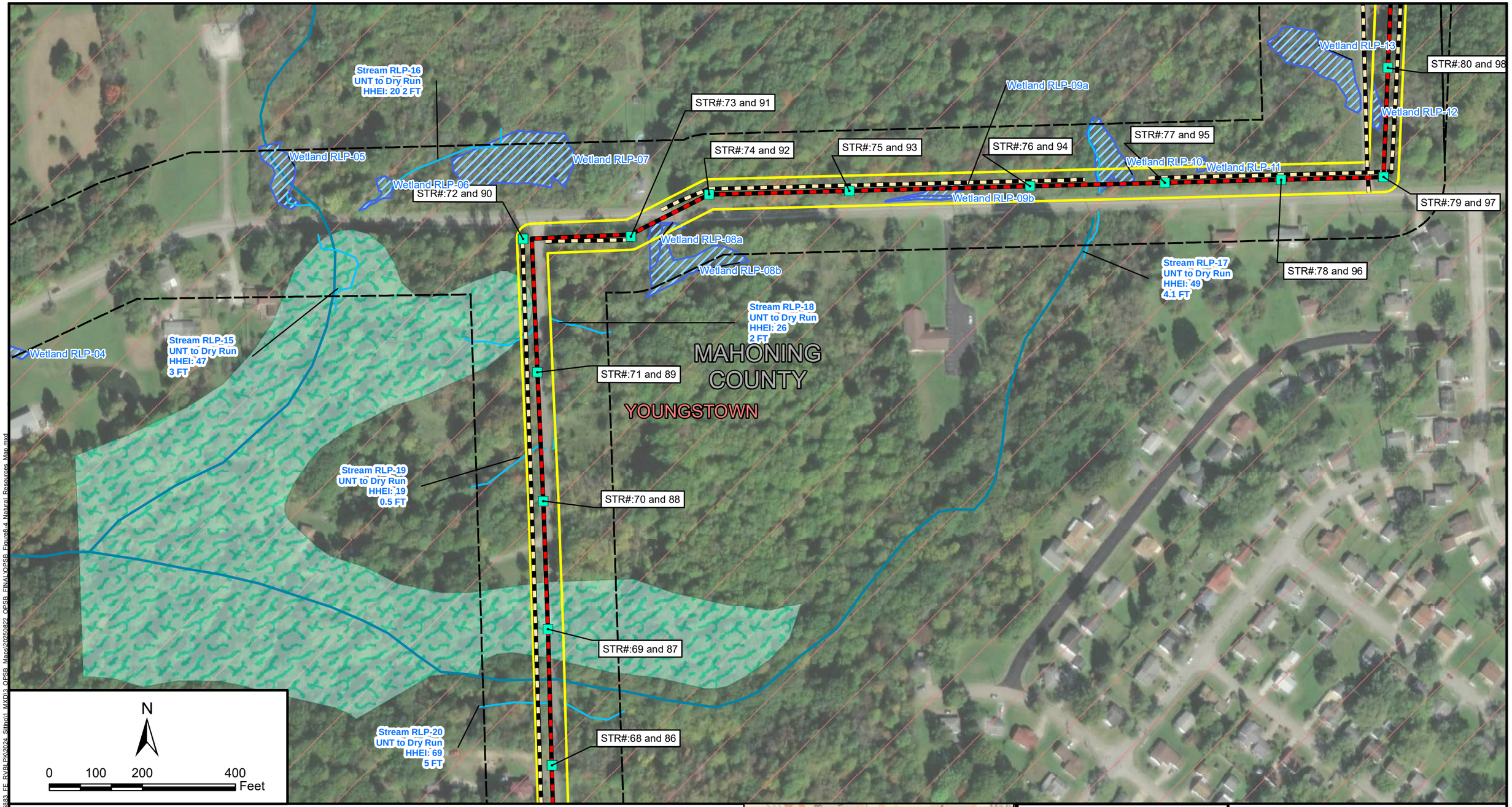
Source: BMCD, ESRI, ARCGIS Online World Street Map

ATSI

FIGURE 8-4
NATURAL RESOURCES MAP

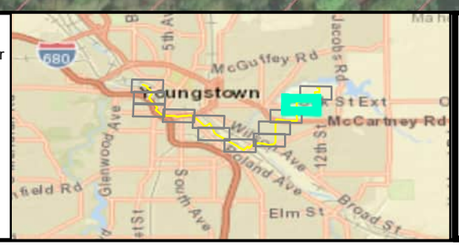
YOUNGSTOWN 138KV REINFORCEMENT
TRANSMISSION LINE

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LEGEND:

- Existing Substation
- Structures
- Preliminary Proposed Access Roads
- Proposed Route
- Delineated Stream
- Stream (National Hydrography Dataset)
- Delineated Wetland
- Water Bodies (National Hydrography Dataset)
- Slopes Greater than 12 Percent
- Sensitive Land Use/Parks
- NFHL 100-Year Floodplain (FEMA)
- NFHL Floodway (FEMA)
- Township Boundary
- City or Town
- County Boundary
- Right-of-Way 65ft Project Corridor
- Environmental Study Area



ATSI

FIGURE 8-4
NATURAL RESOURCES MAP

YOUNGSTOWN 138KV REINFORCEMENT
TRANSMISSION LINE

Source: BMCD, ESRI, ARCGIS Online World Street Map

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Lincoln Park Substation

STR#:88 and 106

Wetland RLP-17b

Wetland RLP-17a

Wetland RLP-15a

STR#:87 and 105

Wetland RLP-17c

Wetland RLP-15b

Wetland RLP-16b

STR#:104 and 86

STR#:85 and 103

Wetland RLP-16c

YOUNGSTOWN

Wetland RLP-28

MAHONING COUNTY

STR#:84 and 102

STR#:83 and 101

Wetland RLP-16a

Wetland RLP-14

STR#:82 and 100

STR#:81 and 99

Wetland RLP-13

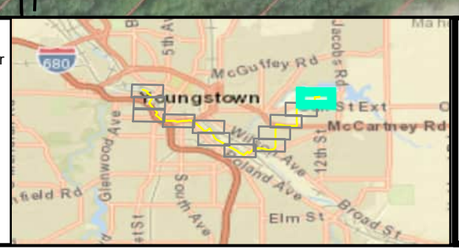
Oak Street Park

N

0 100 200 400 Feet

LEGEND:

- Existing Substation
- Structures
- Preliminary Proposed Access Roads
- Proposed Route
- Delineated Stream
- Stream (National Hydrography Dataset)
- Delineated Wetland
- Water Bodies (National Hydrography Dataset)
- Slopes Greater than 12 Percent
- Sensitive Land Use/Parks
- NFHL 100-Year Floodplain (FEMA)
- NFHL Floodway (FEMA)
- Township Boundary
- City or Town
- County Boundary
- Right-of-Way 65ft Project Corridor
- Environmental Study Area



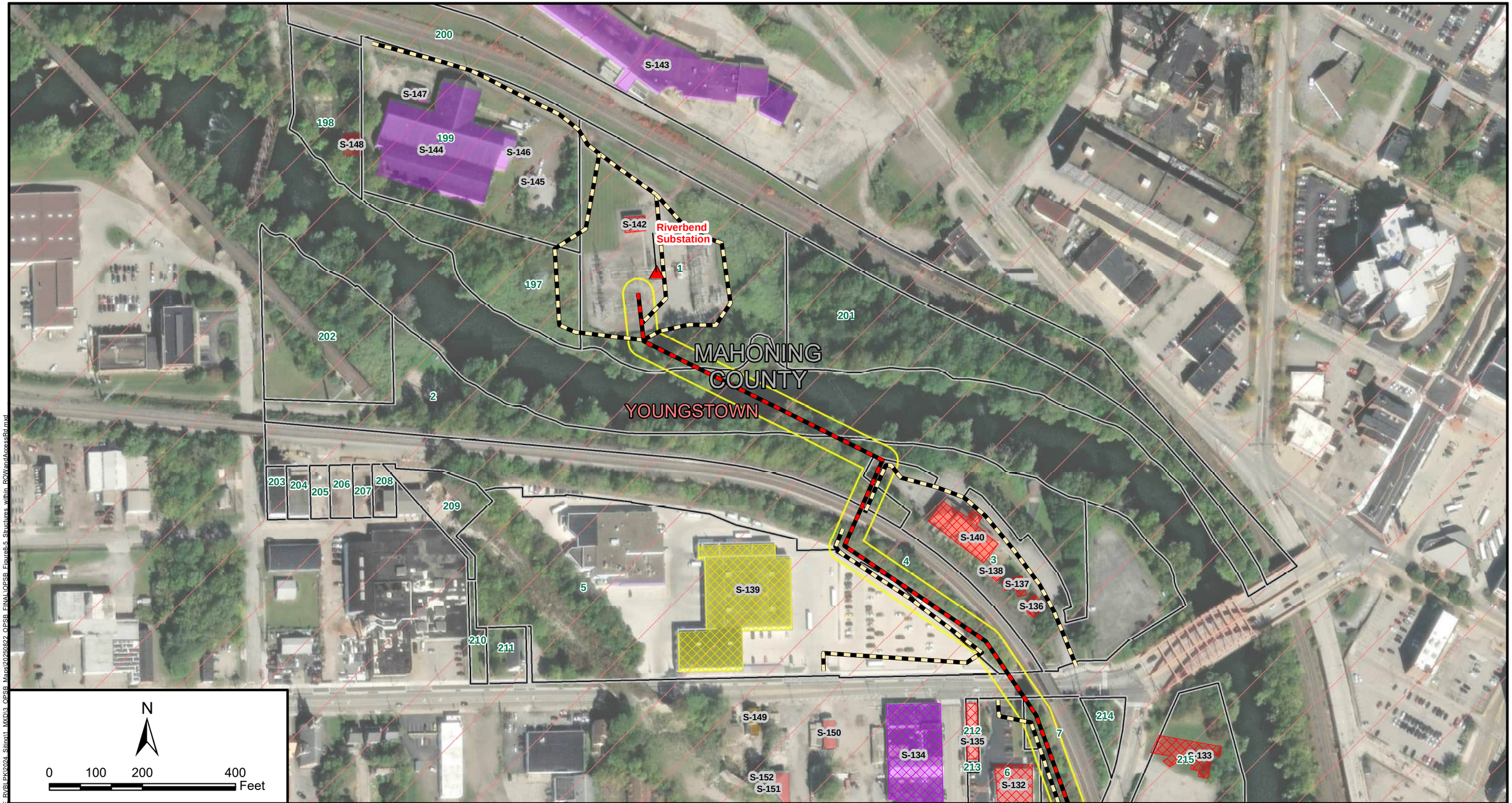
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FIGURE 8-4
NATURAL RESOURCES MAP

YOUNGSTOWN 138KV REINFORCEMENT TRANSMISSION LINE

Source: BMCD, ESRI, ARCGIS Online World Street Map

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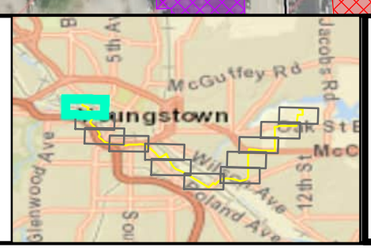
- Existing Substation
- Preferred Route
- Preliminary Proposed Access Roads
- Right-of-Way 65ft Preferred Route

Structures within 250ft of Access Road

- Commercial
- Industrial
- Institutional
- Residential

Structures 200ft outside of ROW

- Commercial
- Industrial
- Institutional
- Residence
- Township Boundary
- City or Town
- County Boundary
- Impacted Parcel

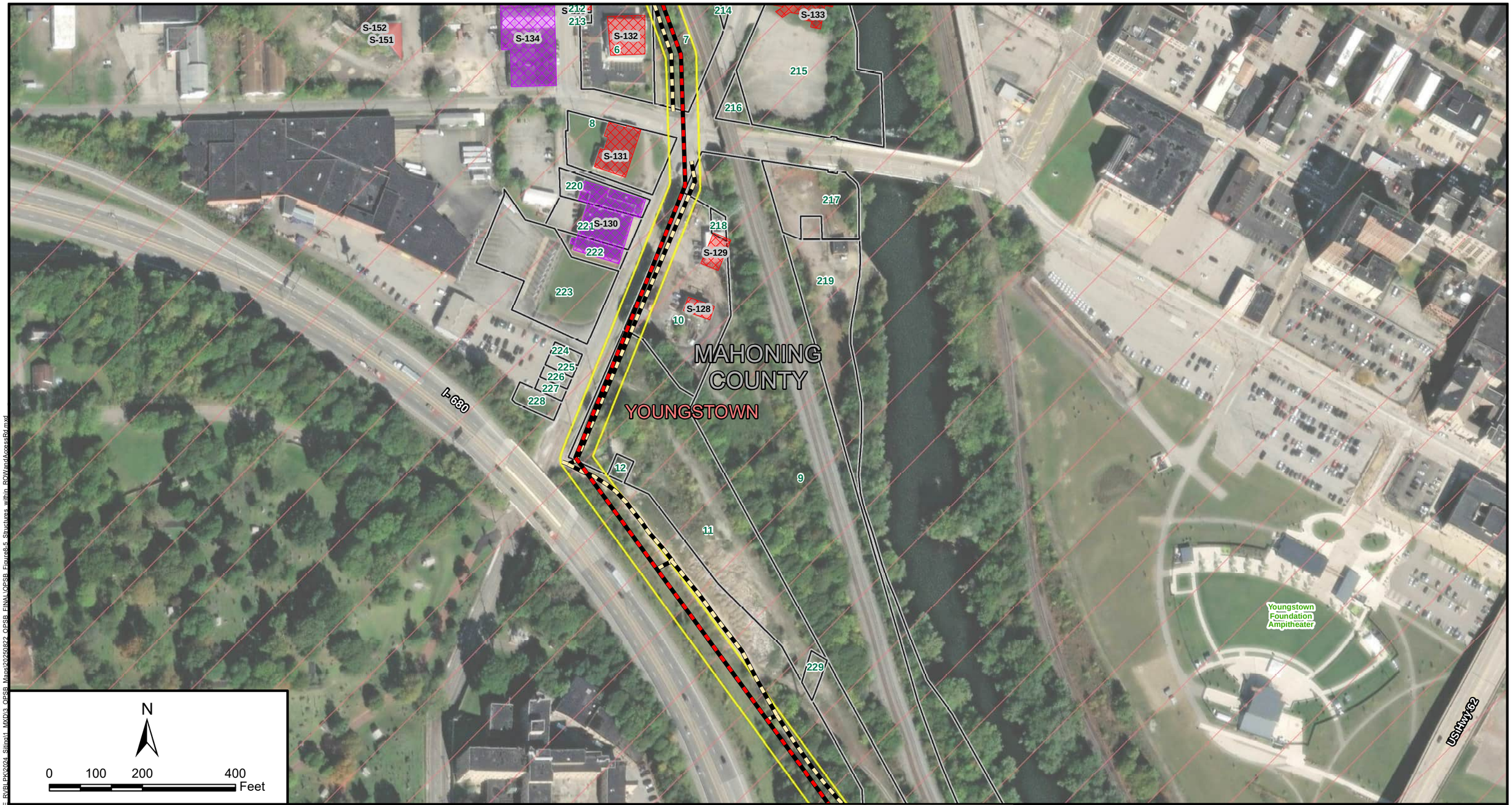


Source: BMCD, ESRI, ARCGIS Online World Street Map

FIGURE 8-5
STRUCTURES WITHIN 200FT OF THE ROW AND 250 FT OF ACCESS ROADS

YOUNGSTOWN 138KV REINFORCEMENT TRANSMISSION LINE

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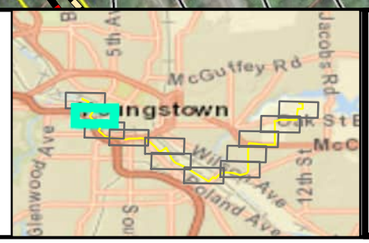
- Existing Substation
- Preferred Route
- Preliminary Proposed Access Roads
- Right-of-Way 65ft Preferred Route

Structures within 250ft of Access Road

- Commercial
- Industrial
- Institutional
- Residential

Structures 200ft outside of ROW

- Commercial
- Industrial
- Institutional
- Residence
- Township Boundary
- City or Town
- County Boundary
- Impacted Parcel



Source: BMCD, ESRI, ARCGIS Online World Street Map

ATSI

FIGURE 8-5
STRUCTURES WITHIN 200FT OF THE ROW AND 250 FT OF ACCESS ROADS

YOUNGSTOWN 138KV REINFORCEMENT TRANSMISSION LINE

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MAHONING COUNTY

YOUNGSTOWN

Wean Park

US Hwy 62

I-680

S-115 S-112 S-110 S-109 S-108 S-107 S-105 S-103

N

0 100 200 400 Feet

LEGEND:

- Existing Substation
- Preferred Route
- Preliminary Proposed Access Roads
- Right-of-Way 65ft Preferred Route

Structures within 250ft of Access Road

- Commercial
- Industrial
- Institutional
- Residential

Structures 200ft outside of ROW

- Commercial
- Industrial
- Institutional
- Residence
- Township Boundary
- City or Town
- County Boundary
- Impacted Parcel

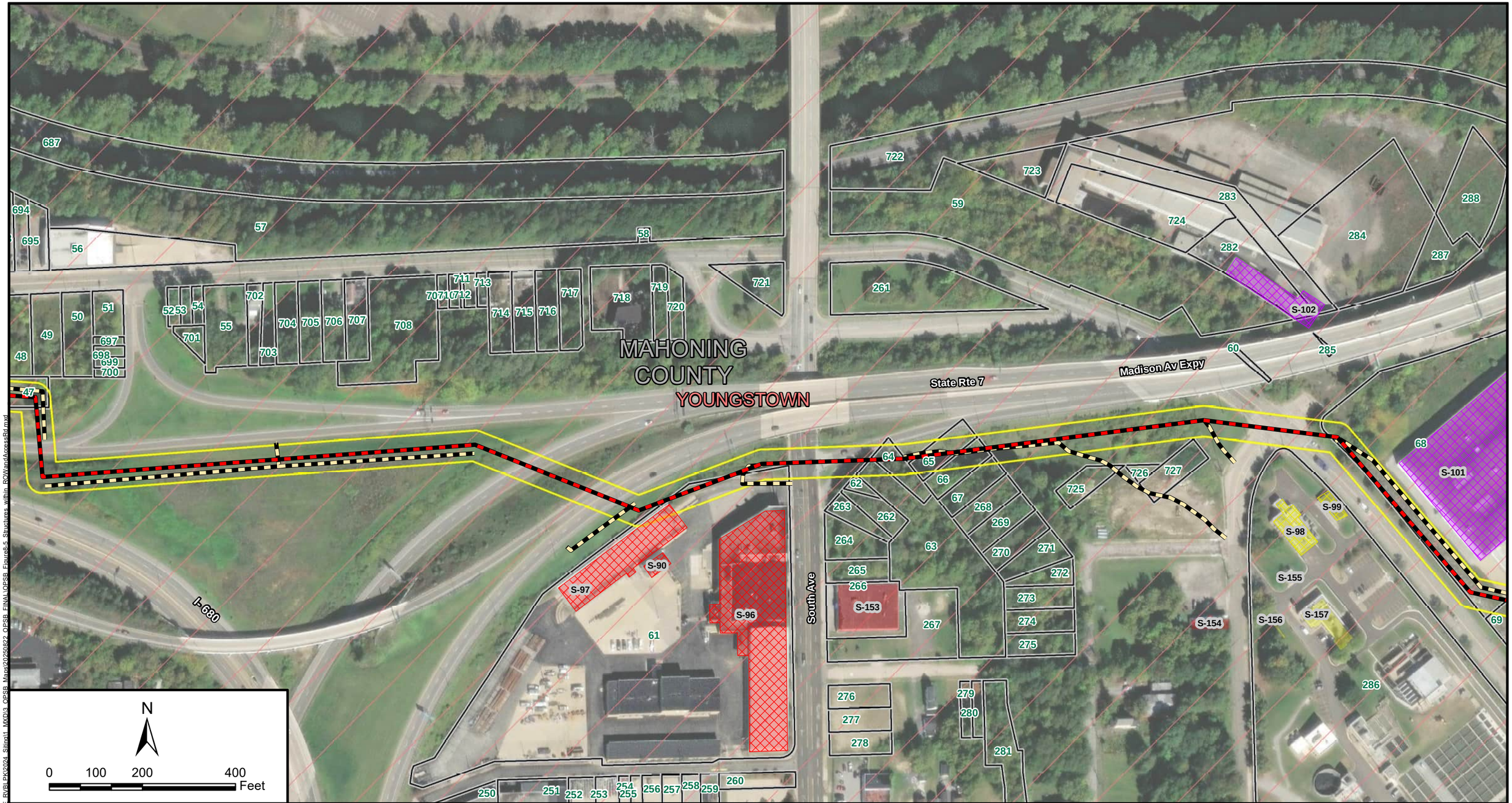
Source: BMCD, ESRI, ARCGIS Online World Street Map

ATSI

FIGURE 8-5
STRUCTURES WITHIN 200FT OF THE ROW AND 250 FT OF ACCESS ROADS

YOUNGSTOWN 138KV REINFORCEMENT TRANSMISSION LINE

C:\Users\MSUFIRSTENERGY\OHIO Projects\606959883 FE RVBLPK\2024 Siting\1 MXD\3 ORSB Maps\20250922 ORSB FINAL\ORSB Binder\8-5 Structures within ROW and Access Rd.mxd



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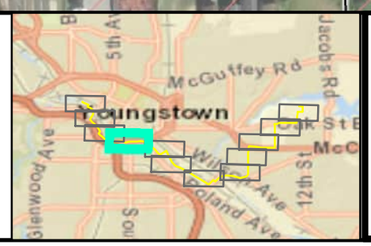
- Existing Substation
- Preferred Route
- Preliminary Proposed Access Roads
- Right-of-Way 65ft Preferred Route

Structures within 250ft of Access Road

- Commercial
- Industrial
- Institutional
- Residential

Structures 200ft outside of ROW

- Commercial
- Industrial
- Institutional
- Residence
- Township Boundary
- City or Town
- County Boundary
- Impacted Parcel

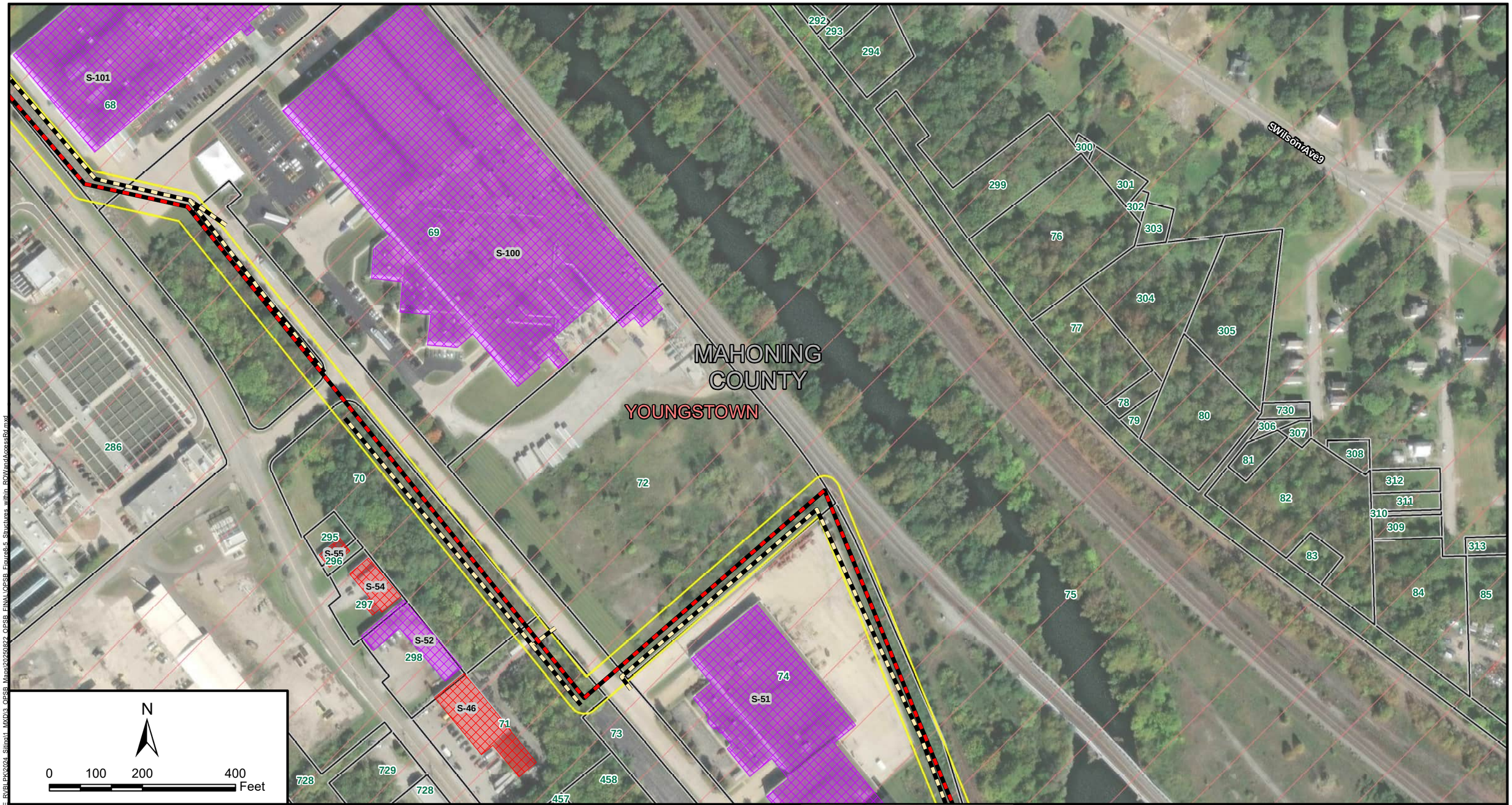


Source: BMCD, ESRI, ARCGIS Online World Street Map

FIGURE 8-5
STRUCTURES WITHIN 200FT OF THE ROW
AND 250 FT OF ACCESS ROADS

YOUNGSTOWN 138KV REINFORCEMENT
TRANSMISSION LINE

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LEGEND:

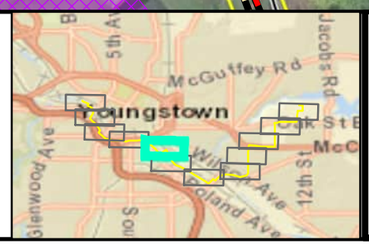
- Existing Substation
- Preferred Route
- Preliminary Proposed Access Roads
- Right-of-Way 65ft Preferred Route

Structures within 250ft of Access Road

- Commercial
- Industrial
- Institutional
- Residential

Structures 200ft outside of ROW

- Commercial
- Industrial
- Institutional
- Residence
- Township Boundary
- City or Town
- County Boundary
- Impacted Parcel

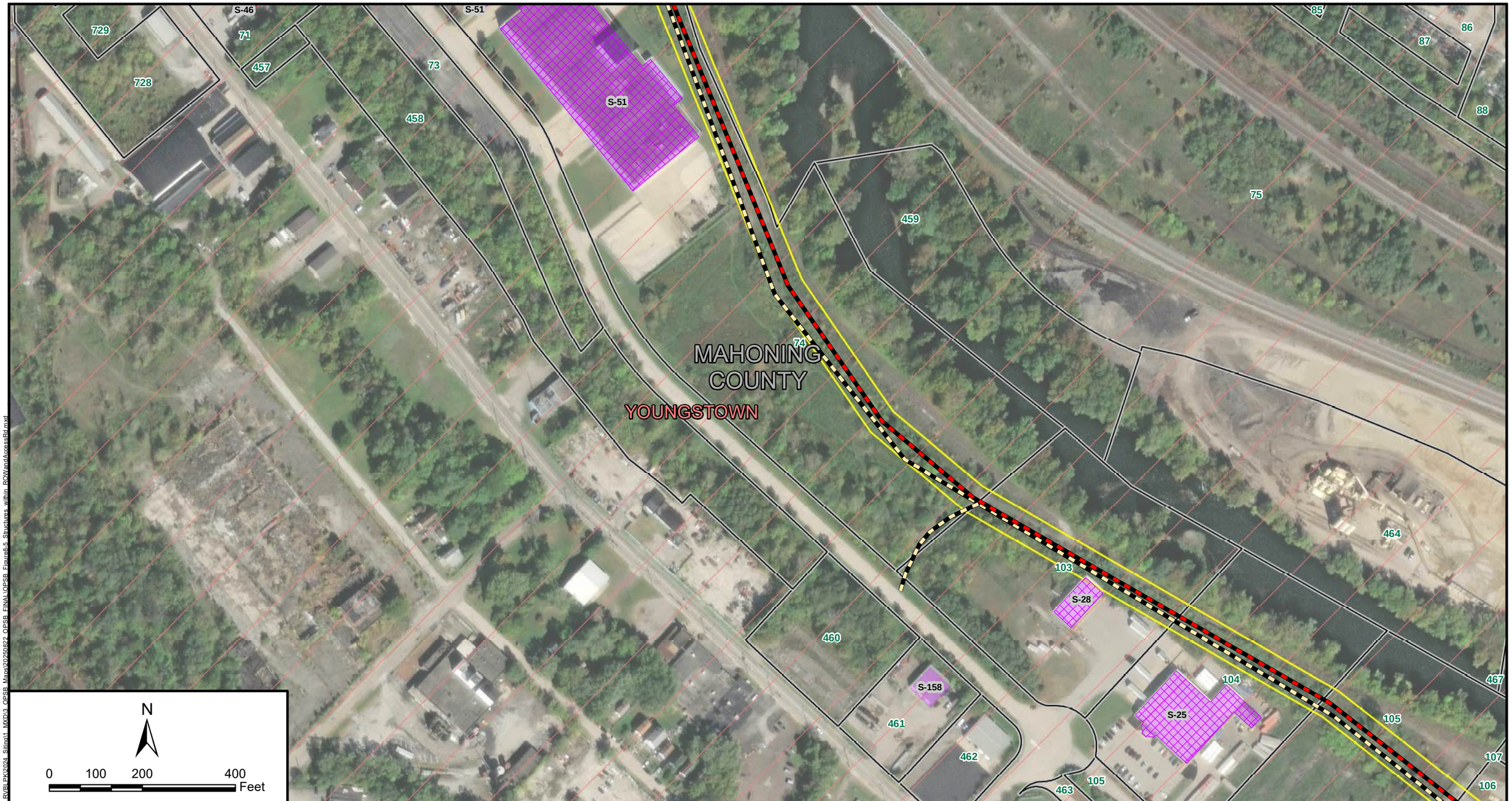


Source: BMCD, ESRI, ARCGIS Online World Street Map

FIGURE 8-5
STRUCTURES WITHIN 200FT OF THE ROW AND 250 FT OF ACCESS ROADS

YOUNGSTOWN 138KV REINFORCEMENT TRANSMISSION LINE

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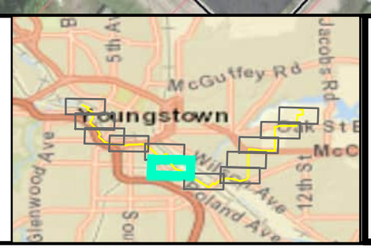
- Existing Substation
- Preferred Route
- Preliminary Proposed Access Roads
- Right-of-Way 65ft Preferred Route

Structures within 250ft of Access Road

- Commercial
- Industrial
- Institutional
- Residential

Structures 200ft outside of ROW

- Commercial
- Industrial
- Institutional
- Residence
- Township Boundary
- City or Town
- County Boundary
- Impacted Parcel

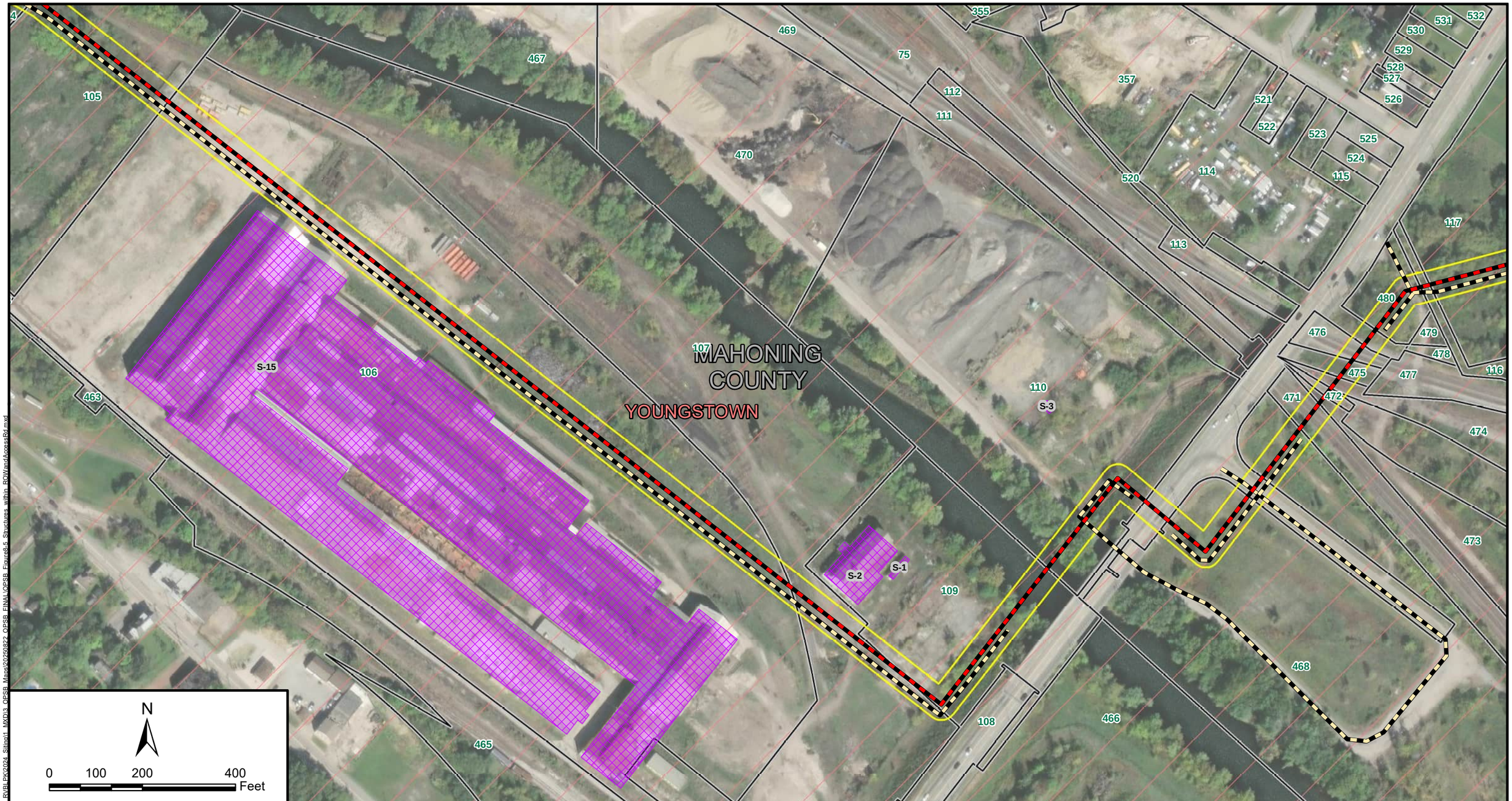


Source: BMCD, ESRI, ARCGIS Online World Street Map

FIGURE 8-5
STRUCTURES WITHIN 200FT OF THE ROW
AND 250 FT OF ACCESS ROADS

YOUNGSTOWN 138KV REINFORCEMENT
TRANSMISSION LINE

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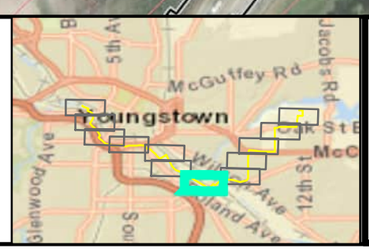
- Existing Substation
- Preferred Route
- Preliminary Proposed Access Roads
- Right-of-Way 65ft Preferred Route

Structures within 250ft of Access Road

- Commercial
- Industrial
- Institutional
- Residential

Structures 200ft outside of ROW

- Commercial
- Industrial
- Institutional
- Residence
- Township Boundary
- City or Town
- County Boundary
- Impacted Parcel

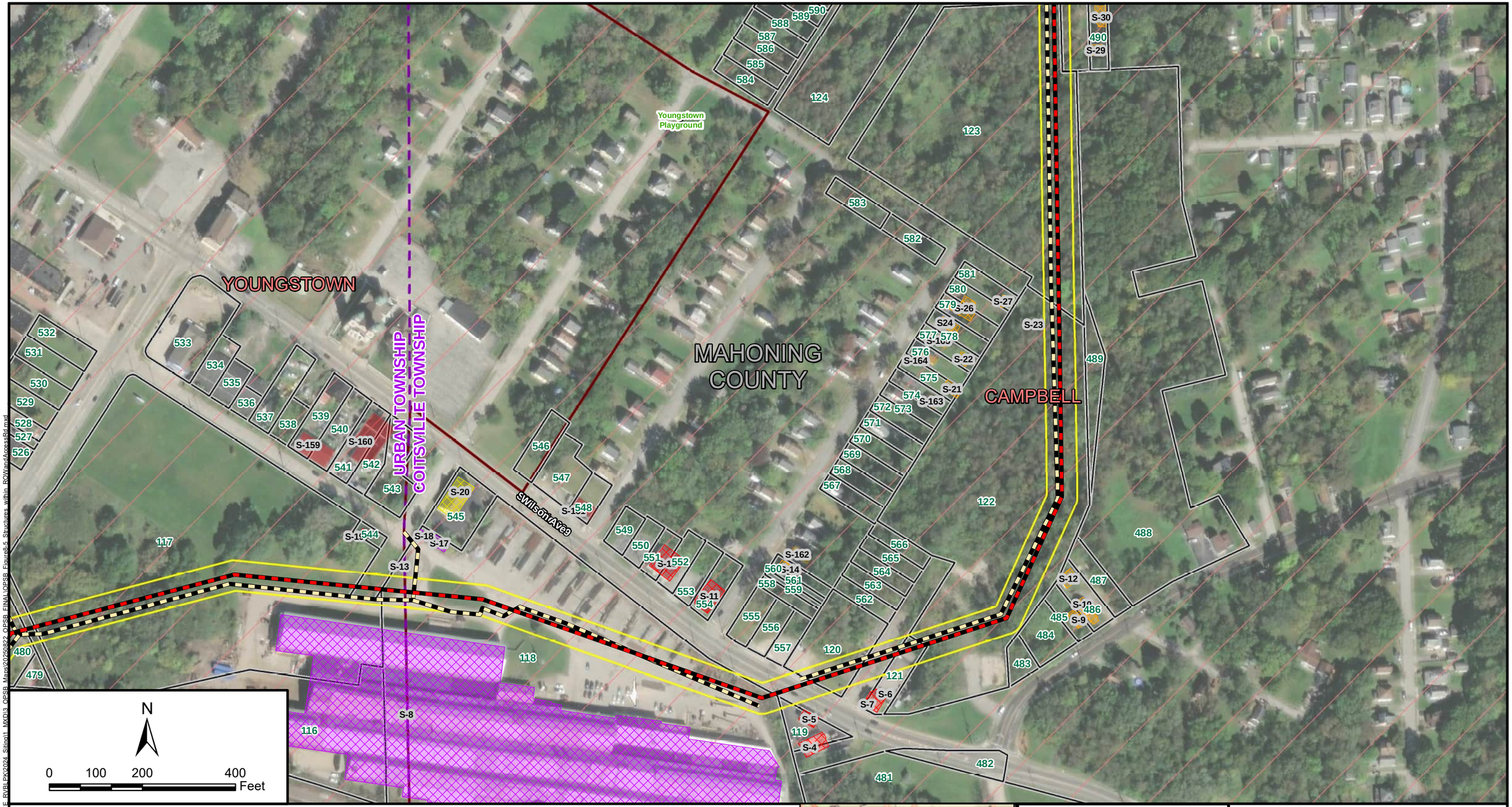


Source: BMCD, ESRI, ARCGIS Online World Street Map

FIGURE 8-5
STRUCTURES WITHIN 200FT OF THE ROW AND 250 FT OF ACCESS ROADS

YOUNGSTOWN 138KV REINFORCEMENT TRANSMISSION LINE

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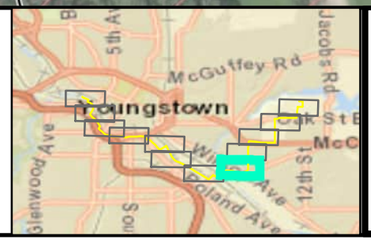
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MAHONING COUNTY

COITSVILLE TOWNSHIP
URBAN TOWNSHIP

YOUNGSTOWN

CAMPBELL

N

0 100 200 400 Feet

LEGEND:

- Existing Substation
- Preferred Route
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- Right-of-Way 65ft Preferred Route

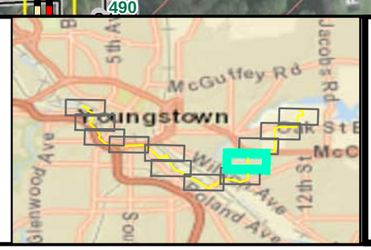
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Source: BMCD, ESRI, ARCGIS Online World Street Map



ATSI

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YOUNGSTOWN 138KV REINFORCEMENT TRANSMISSION LINE

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YOUNGSTOWN

MAHONING COUNTY

US Hwy 422

McCartney Rd

Oak St

N

0 100 200 400 Feet

LEGEND:

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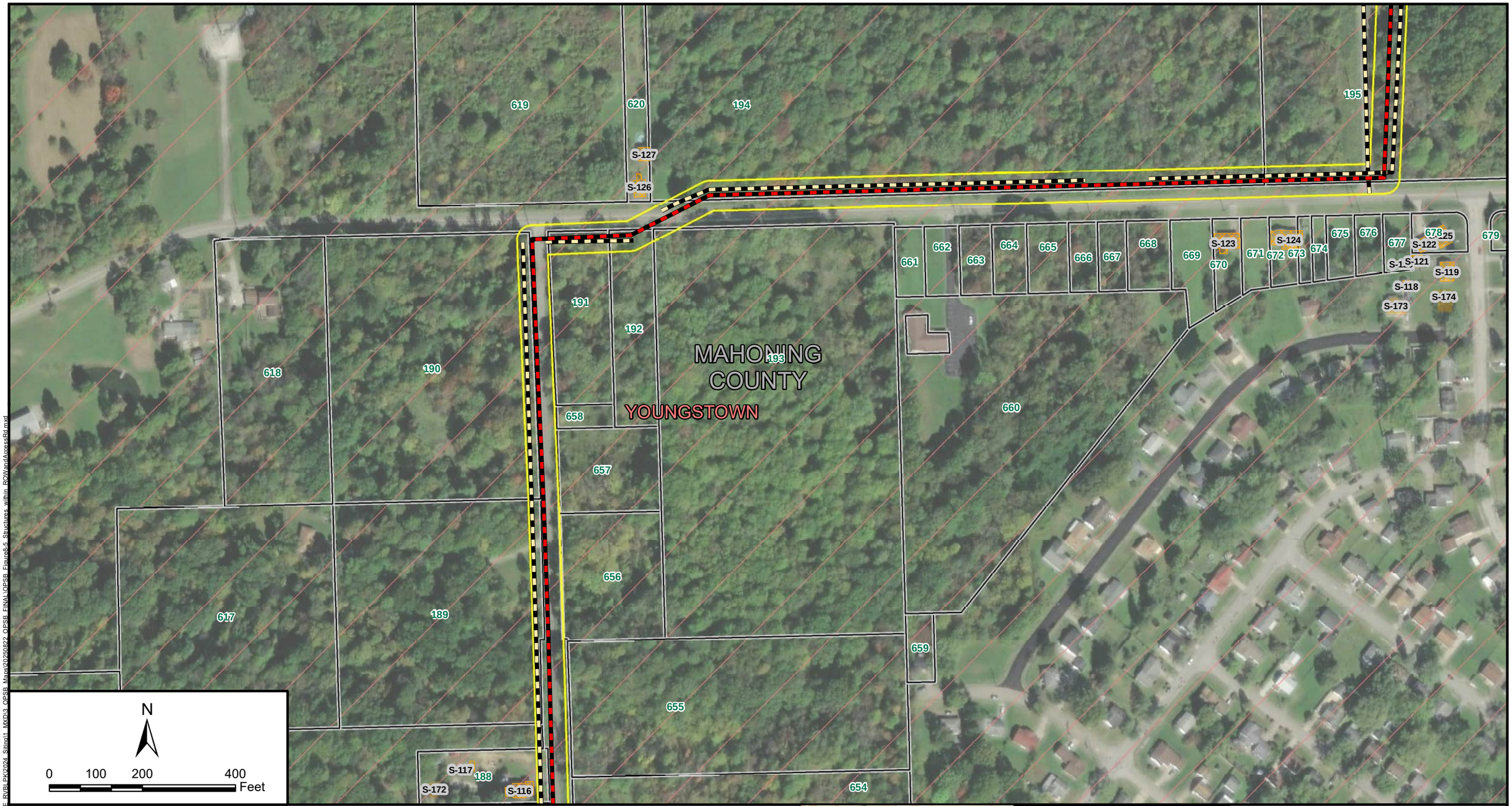
Source: BMCD, ESRI, ARCGIS Online World Street Map

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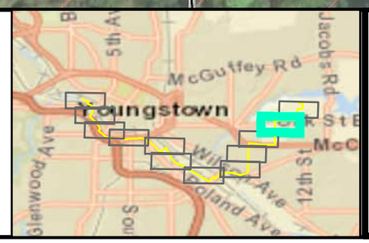
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Lincoln Park Substation

S-141

196

S-176

S-175

683

MAHONING COUNTY

YOUNGSTOWN

194

682

195

681

Oak Street Park

N

0 100 200 400 Feet

LEGEND:

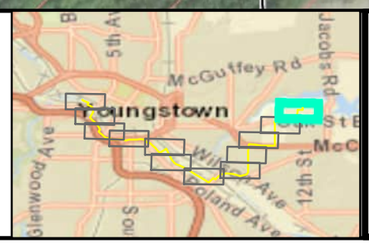
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YOUNGSTOWN 138KV REINFORCEMENT TRANSMISSION LINE

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Department of Natural Resources
ohiodnr.gov

Mike DeWine, *Governor*
Jim Tressel, *Lt. Governor*
Mary Mertz, *Director*

Office of Real Estate & Land Management
Tara Paciorek - Chief
2045 Morse Road – E-2
Columbus, Ohio 43229-6693

August 21, 2025

Brian Bielfelt
AECOM
525 Vine Street, Suite 1900
Cincinnati, Ohio 45202

Re: 25-0279_Youngstown 138kV Reinforcement

Project: The proposed project involves the construction of approximately 6.5 miles of new 138kV transmission line.

Location: The proposed project is located in Youngstown, Mahoning County, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state, or federal agency nor relieve the applicant of the obligation to comply with any local, state, or federal laws or regulations.

Natural Heritage Database: The Natural Heritage Database has the following data within one mile of the project area:

Short-headed Garter Snake (*Thamnophis brachystoma*), SC

Conservation status abbreviations are as follows: E = state endangered; T = state threatened; P = state potentially threatened; SC = state species of concern; SI = state special interest; U = state status under review; X = presumed extirpated in Ohio; FE = federally endangered, and FT = federally threatened. The review was performed on the specified project area as well as an additional one-mile radius. Records searched date from 1980. Features searched include locations of rare and endangered plants and animals determined to be of value to the conservation of their species, high quality plant communities, animal breeding assemblages, and outstanding geological features.

The location record for the species listed above is provided in a shapefile attachment to this letter. Species location information will not be disclosed, published, or distributed beyond the scope of your project. Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for an area is not a statement that rare species or unique features are absent from that area.

Fish and Wildlife: The Division of Wildlife (DOW) has the following comments.

The DOW recommends that impacts to streams, wetlands and other water resources be avoided and minimized to the fullest extent possible, and that Best Management Practices be utilized to minimize erosion and sedimentation.

The entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally endangered species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. During the spring and summer (April 1 through September 30), these species of bats predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. If trees are present within the project area, and trees must be cut, the DOW recommends cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH ≥ 20 if possible. If trees are present within the project area, and trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting. Mist net and acoustic surveys should be conducted in accordance with the most recent version of the "*OHIO DIVISION OF WILDLIFE GUIDANCE FOR BAT SURVEYS AND TREE CLEARING*". If state-listed bats are documented, DOW recommends cutting only occur from October 1 through March 31. However, limited summer tree cutting may be acceptable after consultation with the DOW (contact Eileen Wyza at Eileen.Wyza@dnr.ohio.gov).

The DOW also recommends that a desktop habitat assessment is conducted, followed by a field assessment if needed, to determine if a potential hibernaculum is present within the project area. Direction on how to conduct habitat assessments can be found in the current USFWS "*RANGE-WIDE INDIANA BAT & NORTHERN LONG-EARED BAT SURVEY GUIDELINES*." If a habitat assessment finds that a potential hibernaculum is present within 0.25 miles of the project area, please send this information to Eileen Wyza for project recommendations. If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance, however, limited summer or winter tree cutting may be acceptable after consultation with the DOW. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species.

This project must not have an impact on native mussels. This applies to both listed and non-listed species, as all species of mussel are protected in Ohio. Per the Ohio Mussel Survey Protocol (2024), all Group 2, 3, and 4 streams (Appendix A) require a mussel survey. Per the Ohio Mussel Survey Protocol, Group 1 streams (Appendix A) and unlisted streams with a watershed of 5 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (Appendix B) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. Therefore, if in-water work is planned in any stream that meets any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol. If there is no in-water work proposed, impacts to mussels are not likely.

The project is within the range of the western banded killifish (*Fundulus diaphanus menona*), a state endangered fish. The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact this or other aquatic species.

The project is within the range of the eastern massasauga (*Sistrurus catenatus*), a state endangered and a federally threatened snake species. The eastern massasauga uses a range of habitats including wet prairies, fens, and other wetlands, as well as drier upland habitat. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

Due to the potential for impacts to federally listed species, as well as to state-listed species, we recommend that this project be coordinated with the US Fish & Wildlife Service.

Geological Survey: The Division of Geological Survey has the following comments.

Impacts on Public and Private Water Supplies

The proposed project area is in Coitsville and Youngstown townships in Mahoning County. The construction of this project is not expected to have significant impacts on public or private well yields. The Groundwater Vulnerability Index for the proposed project area ranges from 98 to 160, which equates to a low to high groundwater vulnerability (OEPA, 2014). The construction of the facility is not expected to pose a significant groundwater contamination risk.

Groundwater Inventory

Groundwater resources vary throughout the project area. Wells developed in the underlying interbedded sedimentary rocks of the Middle and Lower Pennsylvanian are likely to yield 10 to 25 gallons per minute (Potucek and others, 2025). Wells developed in glacial material are likely to yield 25 to 500 gallons per minute. Wells may be developed in the Mahoning Buried Valley Aquifer (Ohio Department of Natural Resources, Division of Water, Statewide Unconsolidated Aquifer Map, 2000).

ODNR has record of 139 water wells drilled within one mile of the project area. These wells range in depth from 14 to 361 feet, with an average depth of 47 feet. The most common aquifer listed is sand and gravel. Sustainable yields of 20 to 400 gallons per minute have been reported for two wells within one mile of the project area, with the average sustainable yield being 210 gallons per minute (Ohio Department of Natural Resources, Division of Geological Survey, Ohio Water Wells).

Oil, Gas and Mining

ODNR has record of 16 oil and gas wells within one mile of the proposed project area. There are 14 wells listed as producing, one with an expired permit, and one as final restoration (Ohio Department of Natural Resources, Division of Oil and Gas, Ohio Oil and Gas Wells Locator).

ODNR has record of five abandoned underground mines within one mile of the project area. The nearest mine to the project area is a coal mine located 0.4 miles to the south of the project area operated by A. W. Powers (Ohio Department of Natural Resources, Division of Mineral Resources, Mines of Ohio).

Geohazards

Several small earthquakes have historically been recorded near the site. Events within 15-miles of the site are listed in the chart below (Ohio Department of Natural Resources, Division of Geological Survey, Ohio Earthquake Epicenters):

Date	Magnitude	Distance to Site Boundary (miles)	County	Township
January 17, 2022	1.0	13.7	Trumbull	Fowler
July 29, 2014	1.7	8.7	Trumbull	Weathersfield
August 31, 2014	2.1	8.8	Trumbull	Weathersfield
March 17, 2011	2.1	1.1	Mahoning	Youngstown
January 13, 2012	2.1	1.6	Mahoning	Youngstown
March 11, 2014	2.1	6.8	Mahoning	Poland
November 12, 2013	2.1	2.6	Mahoning	Youngstown
August 22, 2011	2.2	3.8	Mahoning	Austintown
September 2, 2011	2.2	1.9	Mahoning	Youngstown
November 25, 2011	2.2	1.5	Mahoning	Youngstown
March 10, 2014	2.2	6.5	Mahoning	Poland
October 20, 2011	2.3	1.1	Mahoning	Youngstown
March 5, 2014	2.3	4.9	Mahoning	Poland
August 25, 2011	2.4	3.6	Mahoning	Austintown
March 10, 2014	2.4	5.8	Mahoning	Poland
March 17, 2011	2.6	1.1	Mahoning	Youngstown
September 26, 2011	2.6	1.6	Mahoning	Youngstown
March 10, 2014	2.6	6.5	Mahoning	Poland
September 30, 2011	2.7	1.6	Mahoning	Youngstown
December 24, 2011	2.7	2	Mahoning	Youngstown
March 10, 2014	3.0	6.1	Mahoning	Poland
December 31, 2011	4.0	1.6	Mahoning	Youngstown

Karst

Karst features usually form in areas that are covered by thin or no glacial drift and the bedrock is limestone or dolomite. The nearest verified sinkhole is located approximately 20 miles to the southeast of the project area. Substantial glacial deposits and the underlying bedrock within the project area makes sinkhole formation unlikely (Ohio Department of Natural Resources, Division of Geological Survey, Ohio Karst).

Drift Thickness and Bedrock Geology

Drift thickness is variable throughout the project area. Drift is thickest in parts of Youngstown Township (76 feet), drift is thinnest on the western and eastern portions of the project area (13 feet) (Powers and Swinford, 2004). The uppermost bedrock units underlying the project area are Allegheny and Pottsville Groups Undivided and Cuyahoga Formation (Ohio Department of Natural Resources, Division of Geological Survey, Bedrock Geology Map of Ohio).

Soils

The project area consists primarily of soils derived from outwash. Chili, Udorthents, and Urban Lands are the most common soil series classifications found within the boundaries of the project area. The Chili Soil has a loam texture and covers over 18% of the project area. The Udorthents and Urban Lands categories make up the largest percentage of the project area consisting of 64% of the project area (USDA Web Soil Survey).

Water Resources: The Division of Water Resources has not conducted a project specific review and/or comments, however, the guidance provided below should be reviewed by the Environmental Review applicant for applicability on this project and subsequent compliance.

If the subject project is in a floodplain regulated by the Federal Emergency Management Agency (FEMA), the local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals. The FEMA National Flood Hazard Layer (NHFL) Viewer website can be utilized to see if the project is in a FEMA regulated floodplain. If the project is not in a FEMA regulated floodplain, then no further action is required.

Ohio Revised Code (ORC) Section 1521.16 mandates that any owner of a property or a facility that has the capacity of withdrawing 100,000 gallons per day (gpd) of water from groundwater, surface water, or both must register with the Division of Water Resources' Water Withdrawal Facilities Registration (WWFR) Program and report their withdrawals annually.

Additional coordination may be required depending on the location of the withdrawal and consumptive use. Restrictions or permitting may be required for:

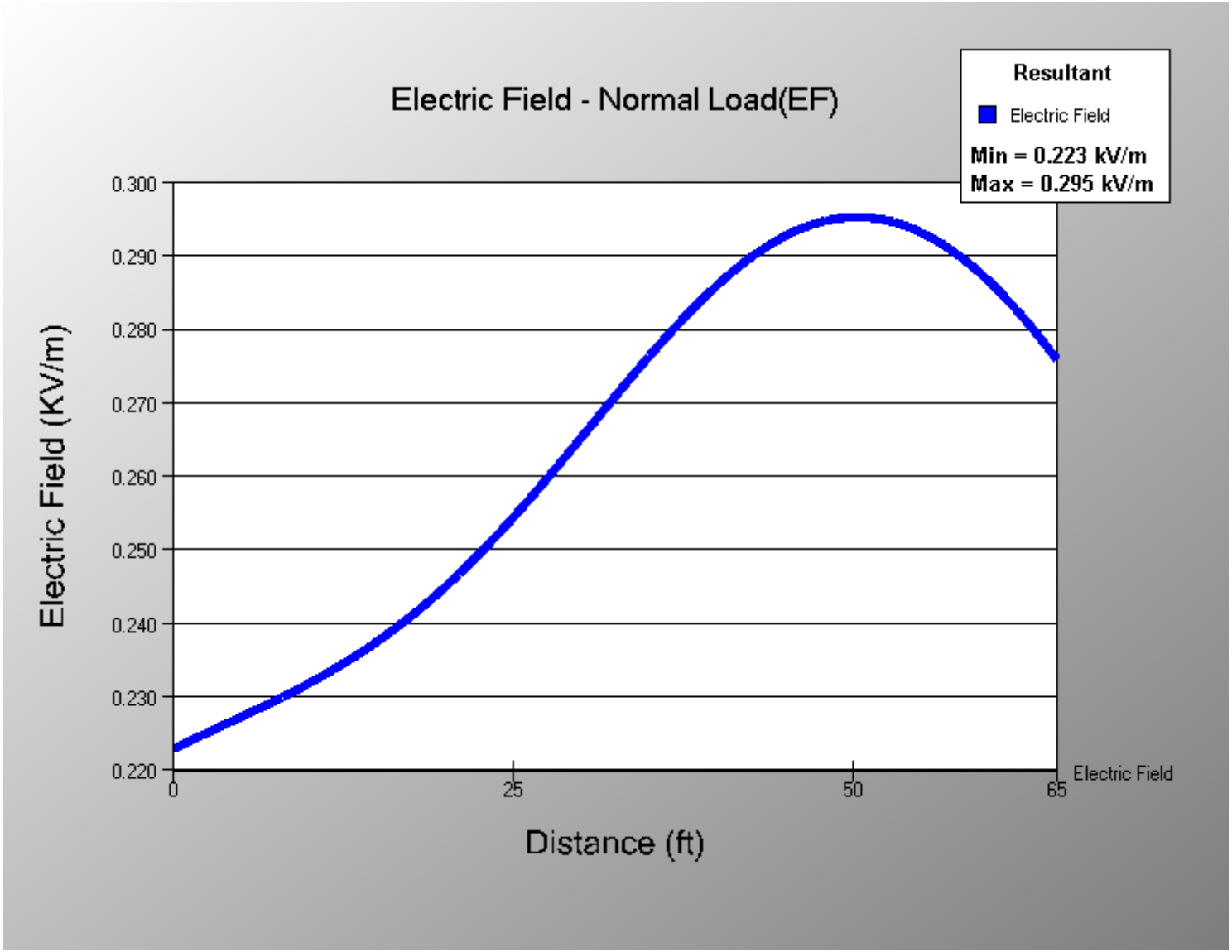
- New or increased consumptive use of water averaging 2 million gallons per day (mgd) within 30 days within the Ohio River basin.
- New or increased withdrawal and consumptive water use in the Lake Erie watershed averaging 1 million gallons per day (mgd) or more in 90 days.
- New or increased water withdrawal directly from Lake Erie averaging 2.5 million gallons per day (mgd) or more in 90 days.
- Diversion or movement of water across the Ohio River and Lake Erie basin divide.

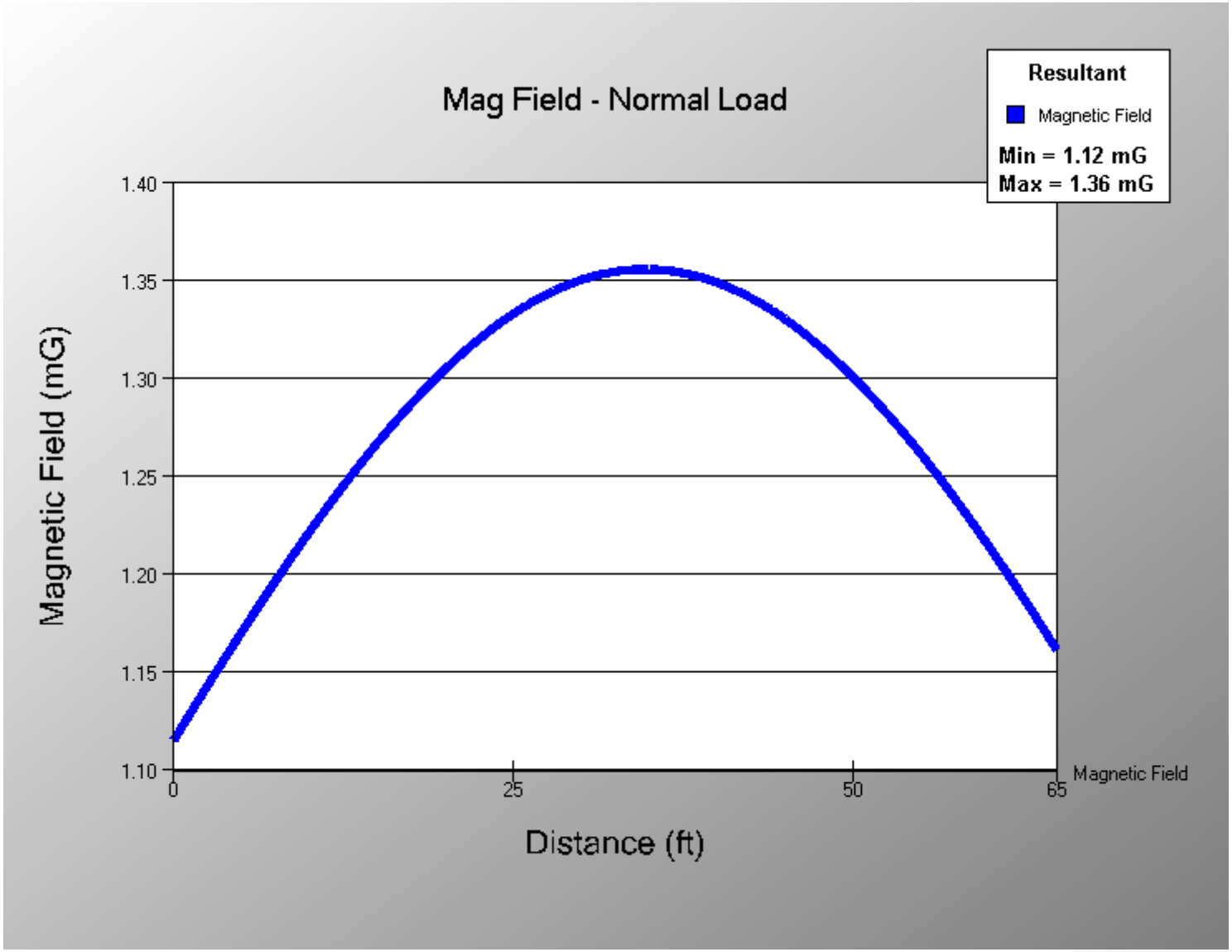
If the project does not involve activities that are subject to water withdrawal regulatory requirements as described above, then no further action is required. For more information, visit the Water Inventory & Planning website.

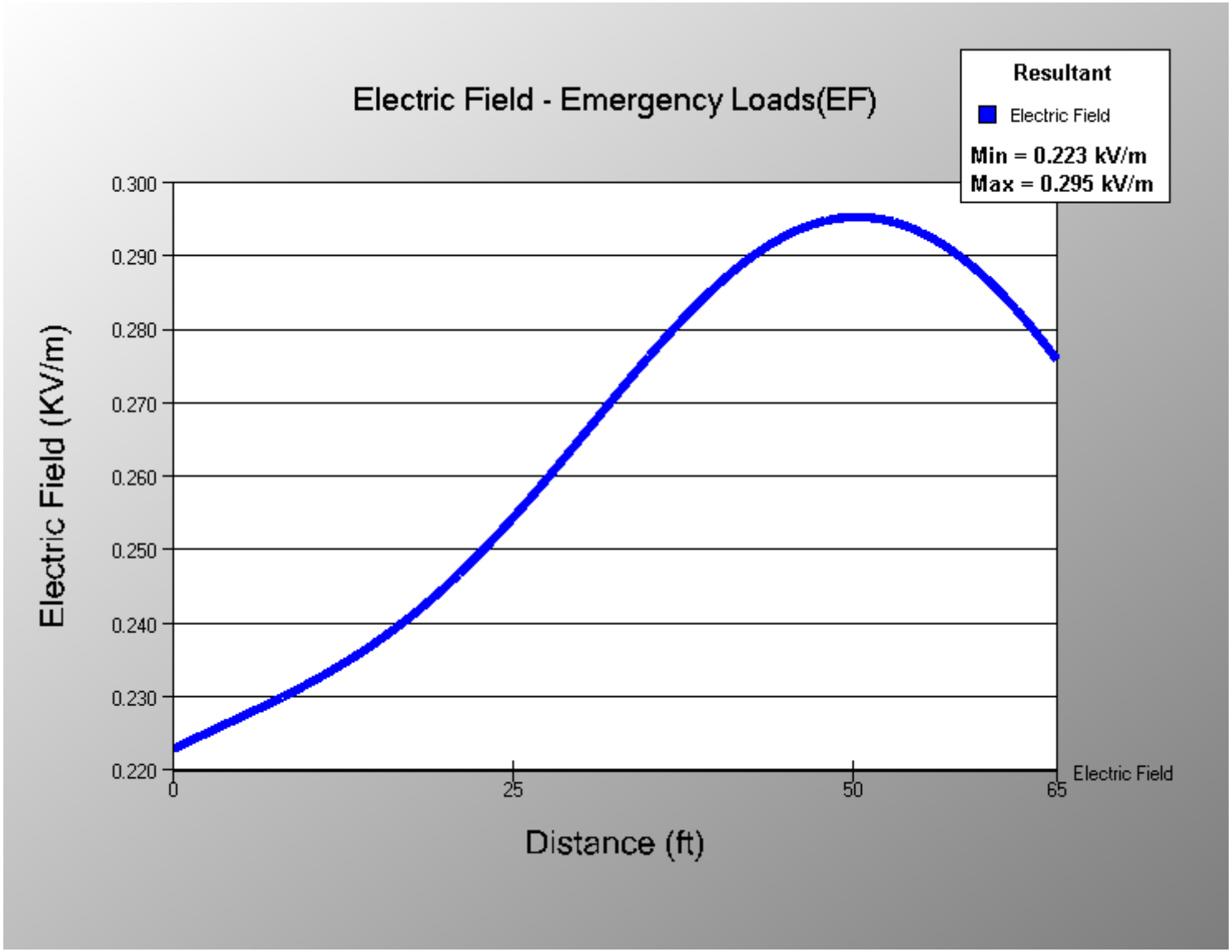
ODNR appreciates the opportunity to provide these comments. Please contact Mike Pettegrew (Environmental Services Administrator) at mike.pettegrew@dnr.ohio.gov if you have questions about these comments or need additional information.

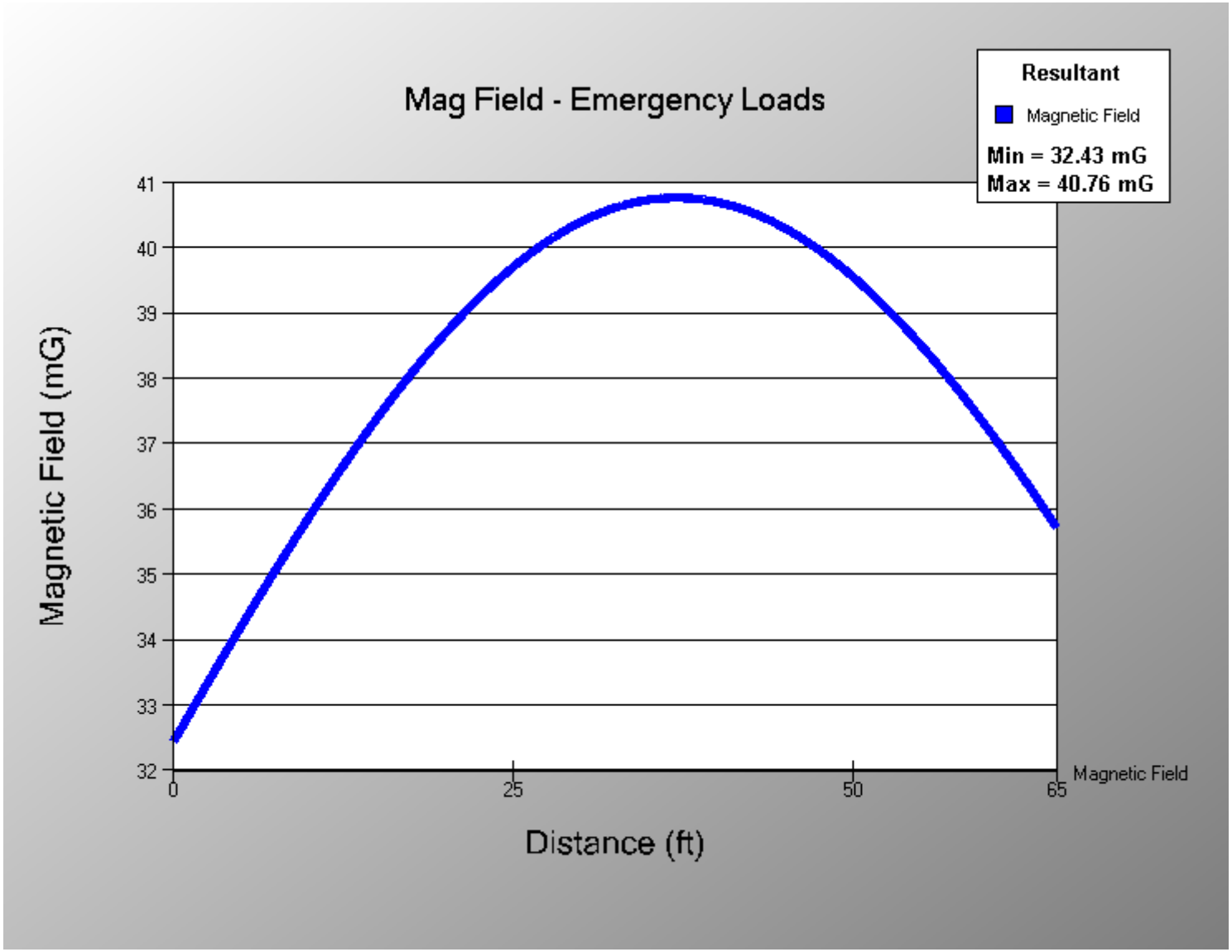
Expiration: *ODNR Environmental Reviews are typically valid for 2 years from the issuance date. If the scope of work, project area, construction limits, and/or anticipated impacts to natural resources have changed significantly from the original project submittal, then a new Environmental Review request should be submitted.*

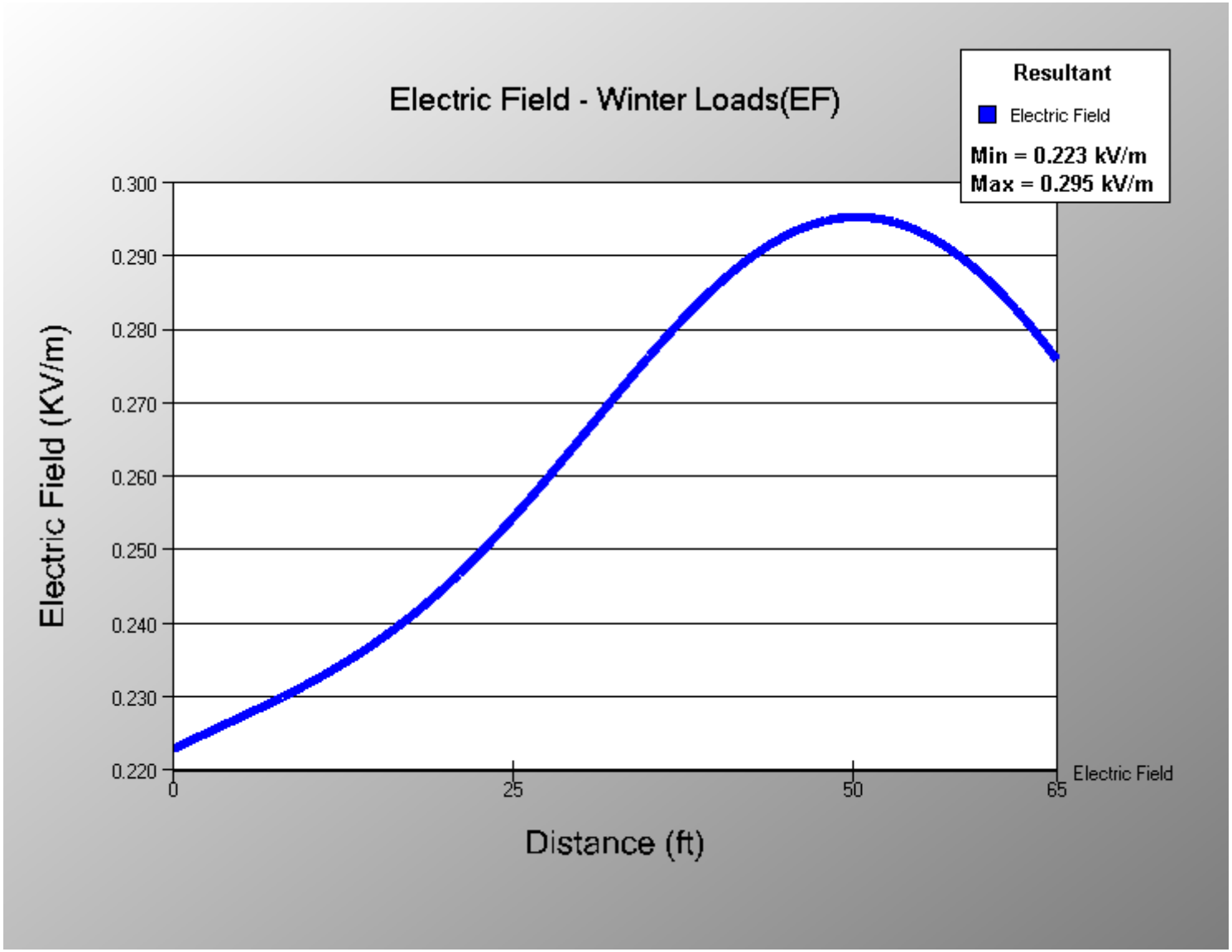
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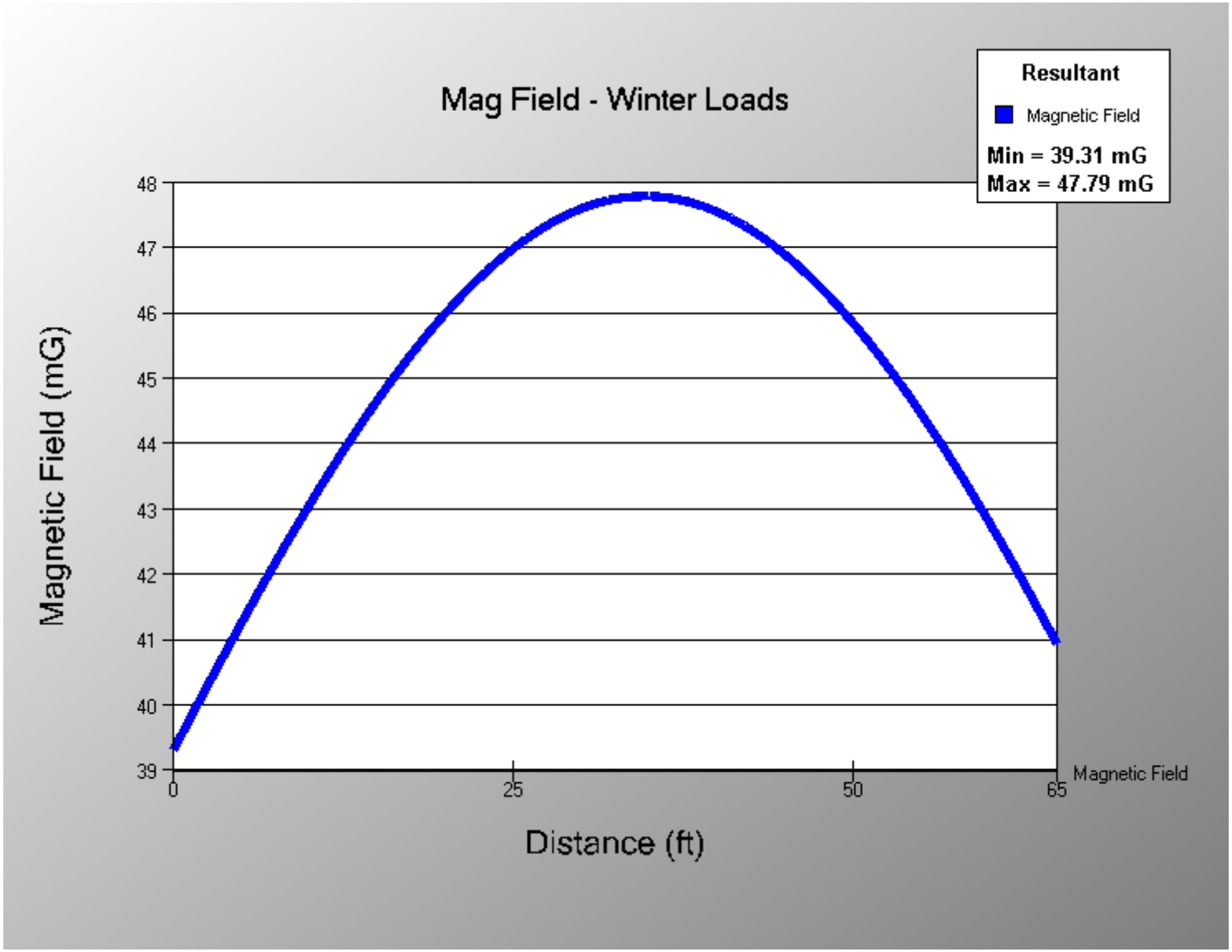

Electric Field - Normal Load(EF)
Resultant
Electric Field
Min = 0.223 kV/m
Max = 0.295 kV/m
Electric Field (KV/m)
0.300
0.290
0.280
0.270
0.260
0.250
0.240
0.230
0.220
0
25
50
65
Distance (ft)
Electric Field


Mag Field - Normal Load
Resultant
Magnetic Field
Min = 1.12 mG
Max = 1.36 mG
Magnetic Field (mG)
1.40
1.35
1.30
1.25
1.20
1.15
1.10
0
25
50
65
Distance (ft)
Magnetic Field


Electric Field - Emergency Loads(EF)
Resultant
Electric Field
Min = 0.223 kV/m
Max = 0.295 kV/m
0.300
0.290
0.280
0.270
0.260
0.250
0.240
0.230
0.220
Electric Field (KV/m)
0
25
50
65
Distance (ft)
Electric Field


Mag Field - Emergency Loads
Resultant
Magnetic Field
Min = 32.43 mG
Max = 40.76 mG
Magnetic Field (mG)
41
40
39
38
37
36
35
34
33
32
0
25
50
65
Magnetic Field
Distance (ft)


Electric Field - Winter Loads(EF)
Resultant
Electric Field
Min = 0.223 kV/m
Max = 0.295 kV/m
Electric Field (KV/m)
0.300
0.290
0.280
0.270
0.260
0.250
0.240
0.230
0.220
0
25
50
65
Distance (ft)
Electric Field


Mag Field - Winter Loads
Resultant
Magnetic Field
Min = 39.31 mG
Max = 47.79 mG
Magnetic Field (mG)
48
47
46
45
44
43
42
41
40
39
0
25
50
65
Distance (ft)
Magnetic Field

YOUNGSTOWN 138kV REINFORCEMENT PROJECT

WETLAND DELINEATION AND STREAM ASSESSMENT REPORT

Prepared for:
American Transmission Systems, Incorporated
a FirstEnergy Company
76 South Main Street
Akron, Ohio 44308

525 Vine Street, Suite 1800
Cincinnati, Ohio 45202

July 2025

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LIST OF ACRONYMS and ABBREVIATIONS

ATSI	American Transmission Systems, Incorporated
CWH	Coldwater Habitat
DBH	Diameter at Breast Height
°F	Degree Fahrenheit
FAC	Facultative
FACU	Facultative upland
FACW	Facultative wetland
GNSS	Global Navigation Satellite System
HHEI	Headwater Habitat Evaluation Index
IBI	Index of Biotic Integrity
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
NWP	Nationwide Permit
OAC	Ohio Administrative Code
OBL	Obligate wetland
OEPA	Ohio Environmental Protection Agency
OHWM	Ordinary High-Water mark
ORAM	Ohio Rapid Assessment Method
PEM	Palustrine Emergent
PFO	Palustrine Forested
PHWH	Primary Headwater Habitat
PSS	Palustrine Scrub/Shrub
QHEI	Qualitative Habitat Evaluation Index
ROW	Right-of-way
UPL	Upland
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish & Wildlife Service
USGS	United States Geological Survey

1.0 INTRODUCTION

American Transmission Systems, Incorporated (ATSI), a FirstEnergy Company (FirstEnergy), is proposing to construct a new 138 kV transmission line from the existing Riverbend Substation to the existing Lincoln Park Substation in Youngstown located in Mahoning County, Ohio. The Youngstown 138kV Reinforcement (Project) is located on the United States Geological Survey (USGS) Youngstown, Ohio and Campbell, Ohio 7.5-minute series topographic quadrangles (Figure 1). The Project begins at the Riverbend Substation and terminates at the Lincoln Park Substation, in the City of Youngstown. Additionally, ATSI intends to expand the existing Riverbend Substation to accommodate the new transmission line. The approximate coordinates for the Riverbend Substation are 41.104186°, -80.66079° and the Lincoln Park Substation are 41.10281°, -80.595436°. The limits of the Project investigation are defined by the survey boundary (Figure 2 and Figure 3).

The Project's survey boundary is approximately 441 acres which encompasses the proposed 65-foot ROW centered along the Project's proposed 3.21-miles common route, 3.05-miles preferred route, and 2.49-miles alternative route. The survey boundary extends outside of the 65-foot ROW to include future potential ancillary work areas such as lay-down yards, pull sites, and access roads. Additionally, the Project's survey boundary includes the extent of the proposed expansion to the existing Riverbend Substation Project (Figure 3).

2.0 METHODOLOGY

Prior to conducting field surveys, digital and published county U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil surveys, U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) mapping, and U.S. Geological Survey (USGS) 7.5-minute topographic maps were reviewed as an exercise to identify the occurrence and location of potential wetland areas (Figure 2). The purpose of the field survey was to assess whether wetlands and other "Waters of the U.S." are present within the Project's survey boundary.

Land uses in the Project area were assigned a general classification based upon the principal land characteristics as observed through aerial photography review and observations during the field surveys.

AECOM ecologists walked the Project's survey boundary, access roads, and work areas to conduct a wetland delineation and stream assessment. Field investigations were conducted across four years, including:

- 2020: January 6-8, August 20, October 6, and November 3
- 2021: March 11
- 2022: November 15
- 2024: June 17, September 20, and December 12

During the field survey, the physical boundaries of observed water features, if identified, were recorded using sub-decimeter capable EOS Arrow Global Navigation Satellite System (GNSS) receivers in conjunction with ArcCollector application on iPad tablets. The GNSS data were imported into ArcMap GIS software, where the data was then reviewed and edited for accuracy.

2.1 WETLAND DELINEATION

The Project's survey boundary was evaluated according to the procedures outlined in the USACE *1987 Wetland Delineation Manual* (*1987 Manual*; Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0)* (*Regional Supplement*; USACE 2012). The *Regional Supplement* was released to address regional wetland characteristics and improve the accuracy and efficiency of wetland delineation procedures. The *1987 Manual* and *Regional Supplement* define wetlands as areas that have positive evidence of three environmental parameters: hydric soils, wetland hydrology, and hydrophytic vegetation. Wetland boundaries are placed where one or more of these parameters give way to upland characteristics.

Since quantitative data were not available for any of the identified wetlands, AECOM utilized the routine on-site delineation method described in the *1987 Manual* and *Regional Supplement* that consisted of a pedestrian site reconnaissance, including identifying the vegetation communities, soils identification, a geomorphologic assessment of hydrology, and notation of disturbance. The methodology used to examine each parameter is described in the following sections.

2.1.1 Soils

Soils were examined for hydric soil characteristics using a spade shovel to extract soil samples. A *Munsell Soil Color Chart* (Kollmorgen Corporation 2010) was used to identify the hue, value, and chroma of the matrix and mottles of the soils. Generally, mottled soils with a matrix chroma of two or less, or unmottled soils with a matrix chroma of one or less are considered to exhibit hydric soil characteristics (Environmental Laboratory 1987). In sandy soils, mottled soils with a matrix chroma of three or less, or unmottled soils with a matrix chroma of two or less are considered to be hydric soils.

2.1.2 Hydrology

The *1987 Manual* requires that an area be inundated or saturated to the surface for an absolute minimum of five percent of the growing season (areas saturated between five percent and 12.5 percent of the growing season may or may not be wetlands, while areas saturated over 12.5 percent of the growing season fulfill the hydrology requirements for wetlands). The *Regional Supplement* states that the growing season dates are determined through onsite observations of the following indicators of biological activity in a given year: (1) above-ground growth and development of vascular plants, and/or (2) soil temperature (12-in. depth) is 41 degrees Fahrenheit (°F) or higher as an indicator of soil microbial activity. Therefore, the beginning of the growing season in a given year is indicated by whichever condition occurs earlier, and the end of the growing season by whichever persists later.

The *Regional Supplement* also states that if onsite data gathering is not practical, the growing season can be approximated by the number of days between the average (five years out of ten, or 50 percent probability) date of the last and first 28°F air temperature in the spring and fall, respectively. The NRCS Wetland Climate Evaluation Database (WETS) data review for Mahoning County states that both stations lack sufficient data for growing season calculation; therefore, data from the neighboring Portage County was reviewed. In an average year for neighboring Portage County, the growing season lasts from April 18 to November 3, or about 199 days. In the Project area, five percent of the growing season equates to approximately eleven days (USDA, NRCS 2017).

The soils and ground surface were examined for evidence of wetland hydrology in lieu of detailed hydrological data. This is an acceptable approach according to the *1987 Manual* and *Regional Supplement.* Evidence indicating wetland hydrology typically includes primary indicators such as surface water, saturation, water marks, drift deposits, water-stained leaves, sediment deposits and oxidized rhizospheres on living roots; and secondary indicators such as, drainage patterns, geomorphic position, micro-topographic relief, and a positive Facultative (FAC)-neutral test (USACE 2012).

2.1.3 Vegetation

Dominant vegetation was visually assessed for each stratum (tree, sapling/shrub, herb and woody vine) and an indicator status of obligate wetland (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), and/or upland (UPL) was assigned to each plant species based on the U.S. Army Corps of Engineers *2018 National Wetland Plant List: Northcentral and Northeast Region* (Lichvar et al. 2018), which encompasses the area of the Project. An area is determined to have hydrophytic vegetation when, under normal circumstances, 50 percent or more

of the composition of the dominant species are OBL, FACW and/or FAC species. Vegetation of an area was determined to be non-hydrophytic when more than 50 percent of the composition of the dominant species was FACU and/or UPL species. In addition to the dominance test, the FAC-Neutral test and prevalence tests are used to determine if a wetland has a predominance of hydrophytic vegetation. Recent USACE guidance indicates that to the extent possible, the hydrophytic vegetation decision should be based on the plant community that is normally present during the wet portion of the growing season in a normal rainfall year (USACE 2012).

Vegetation sampling for wetland delineations can be challenging when plants die back due to freezing temperatures or other factors. The end of the growing season is indicated when woody deciduous species lose their leaves or the last herbaceous plants cease flowering and their leaves become dry or brown, whichever occurs latest. The wetland delineation field work within the Project area was conducted after the occurrence of these events and therefore, outside the normal growing season. Conducting a wetland delineation outside the normal growing season can make identifying the wetland/upland boundary more challenging and may require further assessment during the next growing season.

2.1.4 Wetland Classifications

Wetlands were classified based on the naming convention found in *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). If wetlands were identified within the Project's survey boundary, they would typically be classified as freshwater, palustrine systems, which include non-tidal wetlands dominated by trees, shrubs, emergents, mosses, or lichens. The palustrine wetland classification types typically found in the Project area are as follows:

- ***PEM*** – Palustrine emergent wetlands are characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants.

- ***PSS*** – Palustrine scrub/shrub wetlands are characterized by woody vegetation that is less than three inches diameter at breast height (DBH), and greater than 3.28 feet tall. The woody angiosperms (i.e., small trees or shrubs) in this broad-leaved deciduous community have relatively wide, flat leaves that are shed annually during the cold or dry season.

- ***PFO*** – Palustrine forested wetlands are characterized by woody vegetation that is three inches or more DBH, regardless of total height. These wetlands generally include a canopy of broad-leaved and needle-leaved trees, an understory or young saplings and shrubs, and an herbaceous layer.

- ***PUB*** – Palustrine unconsolidated bottom wetlands include all open water wetlands and deepwater habitats with at least 25 percent cover of particles smaller than stones, and a vegetative cover less than 30 percent. Palustrine open water wetlands are characterized by the lack of large stable surfaces for plant and animal attachment.

- ***PAB*** – Palustrine aquatic bed wetlands are characterized by plants that grow principally on or below the surface of the water for most of the growing season in most years. These plants are best developed in relatively permanent water or under conditions of repeated flooding.

- ***PML*** – Palustrine moss-lichen wetlands include areas where mosses or lichens cover at least 30 percent of substrates other than rock and where emergents, shrubs, or trees alone or in combination cover less than 30 percent.

- ***PUS*** – Palustrine unconsolidated shore wetlands are characterized by substrates lacking vegetation except for pioneer plants that become established during brief periods when growing conditions are favorable. Unconsolidated shore wetlands have less than 30% areal coverage of vegetation and less than 75 percent areal cover of stones, boulders or bedrock.

- ***PRB*** – Palustrine rock bottom wetlands include all wetlands and deepwater habitats with substrates having an aerial cover of stones, boulders, or bedrock 75 percent or greater and vegetative cover of less than 30 percent. Rock bottom wetlands and deepwater habitats are characterized by substrates predominantly made up of stones, boulders, or bedrock.

For some wetlands, multiple Cowardin classifications may be present where more than one classification's vegetation is dominant (vegetation covers 30 percent or more of the substrate). Where multiple Cowardin classifications are present, the Cowardin classification of the plants that constitute the uppermost layer of vegetation is listed.

2.1.5 Ohio Rapid Assessment Method v. 5.0

The OEPA *Ohio Rapid Assessment Method for Wetlands* v. 5.0 (*ORAM*) was developed to determine the relative ecological quality and level of disturbance of a particular wetland in order to meet requirements under Section 401 of the Clean Water Act. Wetlands are scored on the basis of hydrology, upland buffer, habitat alteration, special wetland communities, and vegetation communities. Each of these subject areas is further divided into subcategories under *ORAM* resulting in a score that describes the wetland using a range from 0 (low quality and high disturbance) to 100 (high quality and low disturbance). Wetlands scored from 0 to 29.9 are grouped into "Category 1", 30 to 59.9 are "Category 2" and 60 to 100 are "Category 3". Transitional zones exist between "Categories 1 and 2" from 30 to 34.9 and between "Categories 2 and 3" from 60 to

64.9. However, according to the OEPA, if the wetland score falls into the transitional range, it must be given the higher Category unless scientific data can prove it should be in a lower Category (Mack 2001).

Category 1 Wetlands

Category 1 wetlands support minimal wildlife habitat, hydrological and recreational functions, and do not provide for or contain critical habitats for threatened or endangered species. In addition, Category 1 wetlands are often hydrologically isolated and have some or all of the following characteristics: low species diversity, no significant habitat for wildlife use, limited potential to achieve wetland functions, and/or a predominance of non-native species. These limited quality wetlands are considered to be a resource that has been severely degraded or has limited potential for restoration or is of low ecological functionality.

Category 2 Wetlands

Category 2 wetlands "...support moderate wildlife habitat, or hydrological or recreational functions," and as wetlands which are "...dominated by native species but generally without the presence of, or habitat for, rare, threatened or endangered species; and wetlands which are degraded but have a reasonable potential for reestablishing lost wetland functions." Category 2 wetlands constitute the broad middle category of "good" quality wetlands, and can be considered a functioning, diverse, healthy water resource that has ecological integrity and human value. Some Category 2 wetlands are lacking in human disturbance and considered to be naturally of moderate quality; others may have been Category 3 wetlands in the past but have been degraded to Category 2 status.

Category 3 Wetlands

Wetlands that are assigned to Category 3 have “...superior habitat, or superior hydrological or recreational functions.” They are typified by high levels of diversity, a high proportion of native species, and/or high functional values. Category 3 wetlands include wetlands which contain or provide habitat for threatened or endangered species, are high quality mature forested wetlands, vernal pools, bogs, fens, or which are scarce regionally and/or statewide. A wetland may be a Category 3 wetland because it exhibits one or all of the above characteristics. For example, a forested wetland located in the flood plain of a river may exhibit “superior” hydrologic functions (e.g., flood retention, nutrient removal), but not contain mature trees or high levels of plant species diversity.

2.2 STREAM CROSSINGS

Regulatory activities under the Clean Water Act provide authority for states to issue water quality standards and "designated uses" to all waters of the U.S. upstream to the highest reaches of the tributary streams. In addition, the Federal Water Pollution Control Act of 1972 and its 1977 and 1987 amendments require knowledge of the potential fish or biological communities that can be supported in a stream or river, including upstream headwaters. Streams were identified by the presence of a defined bed and bank, and evidence of an ordinary high-water mark (OHWM). The USACE defines OHWM as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (USACE 2005).

Stream assessments were conducted using the methods described in the OEPA's *Methods for Assessing Habitat in Flowing Waters: Using OEPA's Qualitative Habitat Evaluation Index* (Rankin 2006) and *Field Methods for Evaluating Primary Headwater Streams in Ohio, Version 4.1* (Ohio EPA 2020). AECOM assessments were conducted at or near the proposed transmission line crossing or access road crossing of each stream. These streams were identified using USGS topographic maps, aerial photography, and field reconnaissance.

2.2.1 OEPA Qualitative Habitat Evaluation Index

The qualitative habitat evaluation index (QHEI) is designed to provide a rapid determination of habitat features that correspond to those physical factors that most affect fish communities and which are generally important to other aquatic life (*e.g.,* macroinvertebrates). The quantitative measure of habitat used to calibrate the QHEI score are Indices (or Index) of Biotic Integrity (IBI) for fish. In most instances the QHEI is sufficient to give an indication of habitat quality, and the intensive quantitative analysis used to measure the IBI is not necessary. It is the IBI, rather than the QHEI, that is directly correlated with the aquatic life use designation for particular surface water.

The QHEI method is generally considered appropriate for waterbodies with drainage basins greater than one square mile, if natural pools are greater than 15.75 inches, or if the water feature is shown as blue-line waterways on USGS 7.5-minute topographic quadrangle maps. In order to convey general stream habitat quality to the regulated public, the OEPA has assigned narrative ratings to QHEI scores. The ranges vary slightly for headwater streams (H are those with a watershed area less than or equal to 20 mi^2) versus larger streams (L are those with a watershed area greater than 20 mi^2). The Narrative Rating System includes Very Poor (<30 H and L), Poor (30 to 42 H, 30 to

44 L), Fair (43 to 54 H, 45 to 59 L), Good (55 to 69 H, 60 to 74 L) and Excellent (70+ H, 75+ L) (Rankin 2006).

2.2.2 OEPA Primary Headwater Habitat Evaluation Index

Headwater streams are typically considered to be first-order and second-order streams, meaning streams that have no upstream tributaries (or "branches") and those that have only first-order tributaries, respectively. The stream order concept can be problematic when used to define headwater streams because stream-order designations vary depending upon the accuracy and resolution of the stream delineation. Headwater streams are generally not shown on USGS 7.5-minute topographic quadrangles and are sometimes difficult to distinguish on aerial photographs. Nevertheless, headwater streams are now recognized as useful monitoring units due to their abundance, widespread spatial scale and landscape position (Fritz et al. 2006). Impacts to headwater streams can have a cascading effect on the downstream water quality and habitat value. The headwater habitat evaluation index (HHEI) is a rapid field assessment method for physical habitat that can be used to appraise the biological potential of most Primary Headwater Habitat (PHWH) streams. The HHEI was developed using many of the same techniques as used for QHEI, but has criteria specifically designed for headwater habitats. To use HHEI, the stream must have a "defined bed and bank, with either continuous or periodically flowing water, with watershed area less than or equal to 1.0 mi2 (259ha), and a maximum depth of water pools equal to or less than 15.75 inches" (Ohio EPA 2020).

Headwater streams are scored on the basis of channel substrate composition, bankfull width, and maximum pool depth. Assessments result in a score (0 to 100) that is converted to a specific PHWH stream class. Streams that are scored from 0 to 29.9 are typically grouped into "Class 1 PHWH Streams", 30 to 69.9 are "Class 2 PHWH Streams", and 70 to 100 are "Class 3 PHWH Streams". Technically, a stream can score relatively high, but actually belong in a lower class, and vice-versa. According to the OEPA, if the stream score falls into a class and the scorer feels that based on site observations that score does not reflect the actual stream class, a decision-making flow chart can be used to determine appropriate PHWH stream class using the HHEI protocol (Ohio EPA 2020). Evidence of anthropogenic alterations to the natural channel will result in a "Modified" qualifier for the stream.

Class 1 PHWH Streams: Class 1 PHWH Streams are those that have "normally dry channels with little or no aquatic life present" (Ohio EPA 2020). These waterways are usually ephemeral, with water present for short periods of time due to infiltration from snowmelts or rainwater runoff.

Class 2 PHWH Streams: Class 2 PHWH Streams are equivalent to "warm-water habitat" streams. This stream class has a "moderately diverse community of warm water adapted native fauna either

present seasonally or on an annual basis" (Ohio EPA 2020). These species communities are composed of vertebrates (fish and salamanders) and/or benthic macroinvertebrates that are considered pioneering, headwater temporary, and/or temperature facultative species.

Class 3 PHWH Streams: Class 3 PHWH Streams usually have perennial water flow with cool-cold water adapted native fauna. The community of Class 3 PHWH Streams is comprised of vertebrates (either cold water adapted species of headwater fish and or obligate aquatic species of salamanders, with larval stages present), and/or a diverse community of benthic cool water adapted macroinvertebrates present in the stream continuously (on an annual basis).

2.2.3 401 Eligibility Watersheds

Under the 401 Water Quality Certification for the 2017 NWP, OEPA has limited the use of the expedited permits for impacts to high quality streams in Ohio. OEPA has developed a map/shapefile which designates Ohio watersheds into three categories:

Ineligible Areas: If any stream proposed to be impacted is located in an ineligible area, then impacts to that stream are not eligible for coverage under the NWPs and an individual 401 WQC will be required from OEPA.

Possibly Eligible Areas: Any stream proposed to be impacted which is located in a possibly eligible area will require additional field screenings. The pH value must be collected, or assumed to be greater than 6.5, and a QHEI or HHEI assessment must be performed on the stream. Flow charts provided in the OEPA Final Signed WQC NWP 2017 (OEPA 2017) will then be used to determine if stream impacts will be eligible for coverage under the NWP or if an individual 401 WQC is required.

Eligible Areas: Any impacts to streams located in eligible areas are eligible for coverage under the NWP.

3.0 RESULTS

General land use types in the vicinity of the proposed Project include residential lots, agricultural, commercial lots, wetlands, wooded lots, railroad right-of-way (ROW), and maintained transmission line ROW. Railroad and maintained transmission line ROWs are the dominant land uses in the vicinity of the Project.

AECOM identified a total of 34 wetland complexes, 35 streams, and no ponds within the entire Project's survey boundary that includes the proposed common route, preferred route, and alternative route. The individual resources identified within the survey boundary associated with

the proposed common route, preferred route, and alternative route includes: 11 wetlands and 2 streams, 12 wetlands and 23 streams, and 11 wetlands and 12 streams, respectively. Furthermore, three upland data points were collected within the survey area associated with the expansion area of Riverbend Substation without the identification of any wetlands and/or streams. The wetlands, streams, and ponds identified within the Project's survey boundary are further discussed in the following sections.

3.1 WETLAND DELINEATION

3.1.1 Preliminary Soils Evaluation

According to the USDA/NRCS Web Soil Survey of Mahoning County, Ohio (USDA, NRCS 2019b) and the NRCS Hydric Soils Lists (USDA, NRCS 2019a), 23 soil map units are mapped within the Project's survey boundary. Of these, four are listed as hydric (Table 1; Figure 2).

TABLE 1
SOIL MAP UNITS WITHIN THE LINCOLN PARK-RIVERBEND 138 kV TRANSMISSION LINE PROJECT'S SURVEY BOUNDARY

Soil Series	Symbol	Map Unit Description	Topographic Setting	Hydric	Hydric Component
Bogart	BgB	Bogart loam, 2 to 6 percent slopes	Terraces	No	NA
	BgC	Bogart loam, 6 to 12 percent slopes	Terraces	No	NA
Bogart	BtB	Bogart loam, till substratum, 2 to 6 percent slopes	Terraces	No	NA
Chagrin	Ck	Chagrin loam	Flood Plains	No	NA
Chili	ClD	Chili gravelly loam, 12 to 18 percent slopes	Terraces	No	NA
	CmC	Chili loam, 6 to 12 percent slopes	Terraces	No	NA
	CoB	Chili-Urban land complex, undulating	Terraces	No	NA
	CoC	Chili-Urban land complex, rolling	None Listed	Unranked	NA
Dekalb	DkF	Dekalb very stony loam, 25 to 50 percent slopes	Hills	No	NA
Fitchville	FcB	Fitchville silt loam, 2 to 6 percent slopes	Lake Plains, Lakebeds, Terraces	No	NA
	FhB	Fitchville silt loam, till substratum, 2 to 6 percent slopes	Lake Plains, Terraces	No	NA
Jimtown	JtB	Jimtown loam, 2 to 6 percent slopes	Terraces	No	NA
	JuB	Jimtown loam, till substratum, 2 to 6 percent slopes	Terraces	No	NA
Lorain	Lc	Lorain silty clay loam	Depressions	Yes	Lorain (100)
Loudonville	LdE2	Loudonville loam, 18 to 25 percent slopes, moderately eroded	Hills	No	NA
Ravenna	RaB	Ravenna silt loam, 2 to 6 percent slopes	Till Plains on Uplands	No	NA

TABLE 1
SOIL MAP UNITS WITHIN THE LINCOLN PARK-RIVERBEND 138 kV TRANSMISSION LINE PROJECT'S SURVEY BOUNDARY

Soil Series	Symbol	Map Unit Description	Topographic Setting	Hydric	Hydric Component
Rittman-Urban land complex	RuB	Rittman-Urban land complex, 2 to 6 percent slopes	Till Plains on Uplands	No	NA
Sebring	Sb	Sebring silt loam, 0 to 2 percent slopes	Lake Plains, Terraces	Yes	Sebring (85)
	Se	Sebring silt loam, till substratum, 0 to 2 percent slopes	Till Plains, Terraces	Yes	Sebring (85)
	Sg	Sebring-Urban land complex, 0 to 2 percent slopes	Urban Land on Uplands	Unranked	NA
Udorthents	Ua	Udorthents, loamy, 2 to 25 percent slopes	None Listed	No	NA
Wadsworth-Urban land complex	WbB	Wadsworth-Urban land complex, 2 to 6 percent slopes	Till Plains on Uplands	No	NA
Wayland	Wc	Wayland silt loam	Flood Plains	Yes	Wayland (95)
-	W	Water	-	-	-

USDA NRCS. 2019b. Soil Survey Geographic (SSURGO) Database for Mahoning County, Ohio. Available online at: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

USDA NRCS. 2019a. National Hydric Soils List by State. Available online at: http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/

3.1.2 National Wetland Inventory Map Review

According to the NWI map service layer (USFWS 2024), the Project's survey boundary contains seven mapped NWI wetlands (Figure 2) including one palustrine forested broad-leaved deciduous/emergent, persistent, seasonally flooded system (PFO1/EM1C), two palustrine scrub-shrub broad-leaved deciduous, seasonally flooded system (PSS1C), two riverine, lower perennial, unconsolidated bottom, semi-permanently flooded systems (R2UBFx), one riverine, intermittent, streambed, seasonally flooded system (R4SBC), one riverine, lower perennial, unconsolidated bottom, intermittently exposed system (R2UBG), and one riverine, upper perennial, unconsolidated bottom, permanently flooded system (R3UBH). The NWI mapped wetlands that were identified within the Project's survey boundary were field verified during wetland delineation and stream assessment. The field verified NWI mapped resources includes:

- PFO habitat associated with Wetland RLP-20 (PFO1/EM1C)
- PFO habitat associated with Wetland RLP-19b (PSS1C)
- PSS habitat associated with Wetland RLP-16b (PSS1C)
- Perennial stream named Crab Creek associated with Stream RLP-02 (R2UBFx)

- Intermittent stream of an unnamed tributary to Dry Run associated with Stream RLP-15 (R4SBC)
- Perennial stream named Mahoning River associated with Stream RLP-01 (R2UBG)
- Perennial stream named Dry Run associated with Stream RLP-04 and RLP-29 (R3UBH)

3.1.3 Delineated Wetlands

During the delineation, AECOM identified a total of 34 wetland complexes, ranging in size from less than 0.01 acre to 3.5 acres within the Project's survey boundary (Table 2; Figure 3). Some wetland boundaries extend beyond these areas, but only what was identified within the Project survey boundary were assessed. The 34 wetland complexes that were identified within the Project survey boundary are of three different wetland habitat types and includes: 15 PEM wetlands, five PSS wetlands, five PFO wetlands, three PEM/PFO wetland complexes, three PEM/PSS wetland complexes, two PSS/PFO wetland complexes, and one PEM/PSS/PFO wetland complex.

Completed USACE and ORAM wetland delineation forms are provided in Appendix A and B, respectively. Color photographs taken of each wetland are provided in Appendix D.

TABLE 2
DELINEATED WETLANDS WITHIN THE YOUNGSTOWN 138KV REINFORCEMENT PROJECT SURVEY BOUNDARY

Wetland Name	Latitude	Longitude	Cowardin Classification[1]	NWI Classification	ORAM Score	ORAM Category[2]	Acreage within Survey Boundary	Acreage within 65-ft ROW
Common Route								
Wetland RLP-08a	41.0974343	-80.6018492	PEM	NA	36	Category 2	0.05	0.02
Wetland RLP-08b	41.0973107	-80.6016080	PFO	NA			0.24	0.01
Wetland RLP-09a	41.0976884	-80.5996523	PSS	NA	33	Category 2	0.04	0.04
Wetland RLP-09b	41.0976884	-80.5996523	PEM	NA			0.02	0.02
Wetland RLP-10	41.0978772	-80.5983081	PSS	NA	41	Category 2	0.18	0.06
Wetland RLP-11	41.0978210	-80.5975803	PEM	NA	37	Category 2	0.01	<0.01
Wetland RLP-12	41.0981300	-80.5962091	PEM	NA	28	Category 1	0.03	0.03
Wetland RLP-13	41.0984196	-80.5966553	PSS	NA	37	Category 2	0.31	0.00
Wetland RLP-14	41.0997248	-80.5961294	PFO	NA	45	Category 2	0.36	0.16
Wetland RLP-15a	41.1015129	-80.5959436	PEM	NA	37	Category 2	0.08	0.00
Wetland RLP-15b	41.1007034	-80.5962000	PSS	NA			0.17	0.00
Wetland RLP-16a	41.1006504	-80.5969034	PFO	PSS1C	40	Category 2	4.38	0.00
Wetland RLP-16b	41.1014287	-80.5970648	PSS	PSS1C			0.60	0.00
Wetland RLP-16c	41.1013430	-80.5964515	PSS	NA			1.06	0.00
Wetland RLP-17a	41.1026005	-80.5951044	PEM	NA	45.5	Category 2	0.47	0.05
Wetland RLP-17b	41.1027066	-80.5946721	PSS	NA			0.10	0.02
Wetland RLP-17c	41.1021188	-80.5950172	PFO	NA			1.53	0.06
Wetland RLP-28	41.100863	-80.594352	PFO	NA	31	Category 2	0.08	0.00
Sub-Total: 11	**PEM: 2, PSS: 2, PFO:2, PSS/PFO: 1, PEM/PFO: 1, PEM/PSS:2, and PEM/PSS/PFO: 1**						**9.71**	**0.47**
Preferred Route								
Wetland RLP-01	41.0864987	-80.6279460	PEM	NA	7	Category 1	0.17	0.00
Wetland RLP-02	41.0957284	-80.6107813	PFO	NA	38	Category 2	0.07	0.00
Wetland RLP-03	41.0968282	-80.6088334	PSS	NA	27	Category 1	1.36	0.00
Wetland RLP-04	41.0968767	-80.6069102	PEM	NA	21	Category 1	0.04	0.00
Wetland RLP-05	41.0978844	-80.6047620	PEM	R4SBC	24.5	Category 1	0.14	0.00
Wetland RLP-06	41.0977737	-80.6039703	PSS	NA	26	Category 1	0.04	0.00
Wetland RLP-07	41.0979288	-80.6029135	PSS	NA	31	Category 2	0.56	0.00

TABLE 2
DELINEATED WETLANDS WITHIN THE YOUNGSTOWN 138KV REINFORCEMENT PROJECT SURVEY BOUNDARY

Wetland Name	Latitude	Longitude	Cowardin Classification[1]	NWI Classification	ORAM Score	ORAM Category[2]	Acreage within Survey Boundary	Acreage within 65-ft ROW
Wetland RLP-29a	41.09655	-80.611437	PSS	NA	43.5	Category 2	0.15	0.00
Wetland RLP-29b	41.096412	-80.611821	PEM	NA			0.03	0.00
Wetland RLP-30	41.095433	-80.612788	PEM	R4SBC	31	Category 2	0.04	0.00
Wetland RLP-31	41.094916	-80.613035	PEM	NA	31	Category 2	0.03	0.00
Wetland RLP-32	41.094476	-80.613944	PFO	NA	32	Category 2	0.08	0.00
Wetland RLP-33	41.091764	-80.616838	PEM	NA	15	Category 1	0.02	0.00
Sub-Total: 12	**PEM: 6, PSS: 3, PFO:2, and PEM/PSS:1**						**2.73**	**0.00**
Alternate Route								
Wetland RLP-18a	41.0922675	-80.6029678	PFO	NA	39	Category 2	0.98	0.00
Wetland RLP-18b	41.0926057	-80.6031446	PEM	NA			0.08	0.00
Wetland RLP-19a	41.0914440	-80.6023820	PSS	NA	41	Category 2	0.45	0.00
Wetland RLP-19b	41.0919480	-80.6023280	PFO	PSS1C			0.73	0.00
Wetland RLP-20	41.0910272	-80.6091075	PFO	NA	42	Category 2	0.31	0.00
Wetland RLP-21a	41.0909485	-80.6098513	PEM	NA	34.5	Category 2	0.15	0.00
Wetland RLP-21b	41.0908724	-80.6101750	PFO	NA			0.10	0.00
Wetland RLP-22	41.0902141	-80.6108262	PEM	NA	26	Category 1	0.13	0.00
Wetland RLP-23	41.0822853	-80.6107501	PEM	NA	35.5	Category 2	0.13	0.00
Wetland RLP-24	41.0818870	-80.6111817	PEM	NA	30.5	Category 2	0.08	0.00
Wetland RLP-25	41.0814969	-80.6114122	PEM	NA	19.5	Category 1	0.03	0.00
Wetland RLP-26	41.0815714	-80.6130651	PEM	NA	8	Category 1	0.04	0.00
Wetland RLP-27	41.0886039	-80.6381854	PEM	NA	19	Category 1	<0.01	0.00
Wetland RLP-34	41.085566	-80.633938	PEM	NA	12	Category 1	0.04	0.00
Sub-Total: 11	**PEM: 7, PFO:1, PSS/PFO: 1, and PEM/PFO: 2**						**3.26**	**0.00**
Grand Total: 34	**PEM: 15, PSS: 5, PFO:5, PSS/PFO: 2, PEM/PFO: 3, PEM/PSS:2, and PEM/PSS/PFO: 1**						**15.70**	**0.47**

1. Cowardin Classification: PEM = palustrine emergent, PSS= Palustrine shrub/scrub, and PFO=palustrine forested
2. ORAM Category per 10-page form.
3. Acreage of a wetland that was calculated as being less than one hundredth were rounded up to one-hundredth of an acre and included within the sub-totals and grand totals.
4. No wetlands were identified within the survey area associated with the Riverbend Substation expansion.

3.1.4 Delineated Wetlands ORAM V5.0 Results

Within the Project's survey boundary, 12 wetlands are assessed as Category 1 and 22 wetlands as Category 2 (Tables 2 and 3). Wetland RLP-01 received the lowest ORAM score of 7, while Wetland RLP-17 had the highest score of 45.5. Completed ORAM forms are provided in Appendix B.

TABLE 3

SUMMARY OF DELINEATED WETLANDS WITHIN THE YOUNGSTOWN 138KV REINFORCEMENT PROJECT'S SURVEY BOUNDARY

Cowardin Wetland Type[1]	ORAM Category 1	ORAM Category 2	ORAM Category 3	Number of Wetlands	Acreage within Project's Survey Boundary	Acreage within 65-Foot ROW
Common Route						
PEM	1	1	0	2	0.04	0.04
PSS	0	2	0	2	0.49	0.06
PFO	0	1	0	1	0.44	0.16
PEM/PFO	0	2	0	2	0.29	0.03
PEM/PSS	0	2	0	2	0.31	0.06
PSS/PFO	0	1	0	1	6.04	0.00
PEM/PSS/PFO	0	1	0	1	2.10	0.13
Sub-Total	**1**	**10**	**0**	**11**	**9.71**	**0.48**
Preferred Route						
PEM	4	2	0	6	0.44	0.00
PSS	2	1	0	3	1.96	0.00
PFO	0	2	0	2	0.15	0.00
PEM/PSS	0	1	0	1	0.18	0.00
Sub-Total	**6**	**6**	**0**	**12**	**2.73**	**0.00**
Alternative Route						
PEM	5	2	0	7	0.46	0.00
PFO	0	1	0	1	0.31	0.00
PSS/PFO	0	1	0	1	1.31	0.00
PEM/PFO	0	2	0	2	1.18	0.00
Sub-Total	**5**	**6**	**0**	**11**	**3.26**	**0.00**
Grand-Total						
PEM	10	5	0	15	0.94	0.04
PSS	2	3	0	5	2.45	0.06
PFO	0	5	0	4	0.90	0.16
PEM/PFO	0	3	0	4	1.60	0.03
PEM/PSS	0	3	0	3	0.49	0.06
PSS/PFO	0	2	0	2	7.22	0.00
PEM/PSS/PFO	0	1	0	1	2.10	0.13
Total	**12**	**22**	**0**	**34**	**15.70**	**0.48**

1. Cowardin classification: PFO = palustrine forested, PSS = palustrine scrub/shrub, PEM = palustrine emergent
2. No wetlands were identified within the survey area associated with the Riverbend Substation expansion.

Category 1 Wetlands

Category 1 wetlands delineated within the Project's survey boundary consist of ten PEM wetlands and two PSS wetlands. The lowest scoring Category 1 wetland was Wetland RLP-01, with a score of 7, and the highest scoring Category 1 wetlands was Wetland RLP-12, with a score of 28.0. The wetlands exhibited very narrow to medium upland buffers and a range of low (e.g., shrubland, old field, or young second growth forest) to high intensive surrounding land use (residential, urban, and industrial). The wetlands also exhibited poor to fair plant community development with a moderate to extensive percentage of invasive species, and characteristically had habitat and hydrology in the early stages of recovering from previous manipulation due to mowing, clear cutting, selective cutting and other disturbances.

Category 2 Wetlands

Category 2 wetlands delineated within the Project's survey boundary consist of five PEM wetlands, five PFO wetlands, three PSS wetlands, two PSS/PFO wetland complexes, three PEM/PFO wetland complexes, three PEM/PSS wetland complexes, and one PEM/PSS/PFO wetland complex. The lowest scoring Category 2 wetland was Wetland RLP-24 with a score of 30.5 and the highest scoring Category 2 wetland was Wetland RLP-17 with a score of 45.5. These wetlands generally exhibited narrow to medium upland buffers and very low (old field, shrubland, and second growth forest) to high land use (residential and urban). These wetlands also exhibited poor to fair habitat development with an absent to sparse coverage of invasive species. These wetlands characteristically had habitat and hydrology recovering or recovered from previous manipulation due to mowing, clearcutting, sedimentation, and other likely disturbances.

Category 3 Wetlands

No Category 3 wetlands were identified during the field surveys within the Project's survey boundary.

3.2 STREAM CROSSINGS

The site drains to Crab Creek, Dry Run, Mahoning River, and their unnamed tributaries (UNT). Crab Creek, Dry Run, and Mahoning River are within the Upper Ohio-Beaver drainage basin, which flows east into the Ohio River. The watersheds identified in the Project area include the Dry Run-Mahoning River Watershed [Hydrologic Unit Code (HUC) HUC12 050301030807] and the Crab Creek Watershed (HUC12 050301030807). As per the Section 401 Water Quality Certification (WQC) for Nationwide Permit (NWP) and Stream Eligibility Web Map website, the

Project is located within Eligible areas and impacts to streams, if required, could be authorized by the United States Army Corps of Engineers (USACE) under the NWP Conditions.

According to the Ohio 2018 Ohio Integrated Water Quality Monitoring and Assessment Report, the Dry Run-Mahoning River watershed is listed as impaired for the aquatic life habitat and recreation designated uses. Sources of impairment include natural causes and sources (OEPA 2018).

AECOM identified 35 streams, totaling 23,937 linear feet, within the Project's survey boundary (Table 4). The flow regimes are composed of 20 ephemeral, 9 intermittent, and 6 perennial streams (Figure 3).

Water use designations within the Mahoning River drainage basin are listed under OAC-3745-1-25. Within the Project's survey boundary, Crab Creek and Mahoning River have an existing aquatic use designation of Warm Water Habitat (WWH). Dry Run is listed as both WWH and Coldwater Habitat (CWH) within Project area and the CWH portion of the stream is only located between Oak Street (RM 1.42) to Wilson Avenue (RM 0.31; OAC 2018).

HHEI evaluations were conducted on 31 streams within the Project's survey boundary. QHEI evaluations were conducted on four streams in the Project's survey boundary (Mahoning River, two crossings of Dry Run, and Crab Creek). Due to its limited access, the Mahoning River was evaluated in conjunction with data available on the Ohio 2018 Integrated Water Quality Monitoring and Assessment Report (OEPA 2018) with visible characteristics that were documented from banks during field reconnaissance.

TABLE 4

DELINEATED STREAMS WITHIN THE YOUNGSTOWN 138KV REINFORCEMENT PROJECT'S SURVEY BOUNDARY

Report Name	Latitude	Longitude	Waterbody	Flow Regime	Form Used[1,2]	Score[3]	Class or Narrative Description[3]	Bankfull Width (feet)	Maximum Pool Depth (inches)	OEPA 401 WQC Eligibility for NWP[4]	Linear Feet within Survey Boundary	Linear Feet within 65-ft ROW
Common Route												
Stream RLP-01	41.09473	-80.64371	Mahoning River	Perennial	QHEI	83.50	Warmwater Habitat	NA	NA	Eligible	717	158
Stream RLP-17	41.09788	-80.59839	UNT to Dry Run	Intermittent	HHEI	46	Modified Class 2	4	0.3	Eligible	270	52
Sub-Total (2)			**Perennial: 1 and Intermittent: 1**								**987**	**210**
Preferred Route												
Stream RLP-01	41.09473	-80.64371	Mahoning River	Perennial	QHEI	83.50	Warmwater Habitat	145	NA	Eligible	3,420	70
Stream RLP-02	41.09540	-80.64404	Crab Creek	Perennial	QHEI	22	Warmwater Habitat	10	20	Eligible	351	93
Stream RLP-03	41.08684	-80.62860	UNT to Mahoning River	Ephemeral	HHEI	25	Modified Class 1	0.5	0.25	Eligible	156	0
Stream RLP-04	41.08719	-80.61995	Dry Run	Perennial	QHEI	51	Coldwater Habitat	18	20	Eligible	482	70
Stream RLP-05	41.08960	-80.61948	UNT to Dry Run	Intermittent	HHEI	39	Class 2	4	1	Eligible	366	68
Stream RLP-06	41.08992	-80.61911	UNT to Dry Run	Ephemeral	HHEI	19	Modified Class 1	1	1	Eligible	210	0
Stream RLP-07	41.09164	-80.61846	UNT to Dry Run	Ephemeral	HHEI	25	Class 1	2.4	25	Eligible	87	0
Stream RLP-08	41.09278	-80.61581	UNT to Dry Run	Ephemeral	HHEI	27	Class 1	1.5	1	Eligible	534	155
Stream RLP-09	41.09403	-80.61313	UNT to Dry Run	Ephemeral	HHEI	23	Modified Class 1	3	1	Eligible	241	0
Stream RLP-10	41.09443	-80.61286	UNT to Dry Run	Intermittent	HHEI	67	Modified Class 2	7	4	Eligible	214	0
Stream RLP-11	41.09460	-80.61212	UNT to Dry Run	Ephemeral	HHEI	27	Modified Class 1	1.5	0	Eligible	475	0
Stream RLP-12	41.09533	-80.61094	UNT to Dry Run	Ephemeral	HHEI	27	Modified Class 1	2	0	Eligible	320	0
Stream RLP-13	41.09591	-80.61050	UNT to Dry Run	Perennial	HHEI	65	Class 2	7	6	Eligible	1,695	0
Stream RLP-14	41.09648	-80.60866	UNT to Dry Run	Intermittent	HHEI	41	Modified Class 2	2.5	2	Eligible	931	0

TABLE 4

DELINEATED STREAMS WITHIN THE YOUNGSTOWN 138KV REINFORCEMENT PROJECT'S SURVEY BOUNDARY

Report Name	Latitude	Longitude	Waterbody	Flow Regime	Form Used[1,2]	Score[3]	Class or Narrative Description[3]	Bankfull Width (feet)	Maximum Pool Depth (inches)	OEPA 401 WQC Eligibility for NWP[4]	Linear Feet within Survey Boundary	Linear Feet within 65-ft ROW
Stream RLP-15	41.09723	-80.60422	UNT to Dry Run	Intermittent	HHEI	47	Modified Class 2	3	3	Eligible	326	70
Stream RLP-16	41.09797	-80.60343	UNT to Dry Run	Intermittent	HHEI	30	Modified Class 1	2	2	Eligible	294	0
Stream RLP-29	41.096492	-80.61180	Dry Run	Perennial	QHEI	56	Good Warmwater	30	18	Eligible	4,521	153
Stream RLP-30	41.09417	-80.61399	UNT to Dry Run	Ephemeral	HHEI	14	Modified Class 1	3	0	Eligible	163	0
Stream RLP-31	41.09639	-80.61123	UNT to Dry Run	Ephemeral	HHEI	12	Modified Class 1	3	0	Eligible	81	48
Stream RLP-32	41.09727	-80.60970	UNT to Dry Run	Ephemeral	HHEI	15	Modified Class 1	3	0	Eligible	95	0
Stream RLP-33	41.09741	-80.60937	UNT to Dry Run	Ephemeral	HHEI	14	Modified Class 1	3	0	Eligible	67	0
Stream RLP-34	41.09746	-80.60914	UNT to Dry Run	Ephemeral	HHEI	15	Modified Class 1	3	0	Eligible	33	0
Stream RLP-35	41.09669	-80.61056	UNT to Dry Run	Ephemeral	HHEI	17	Modified Class 1	3	0	Eligible	69	0
Sub-Total (23)			**Perennial:5, Intermittent: 5, and Ephemeral: 13**								**15,131**	**727**
Alternate Route												
Stream RLP-01	41.09473	-80.64371	Mahoning River	Perennial	QHEI	0	Warmwater Habitat	NA	NA	Eligible	4,070	688
Stream RLP-18	41.09686	-80.60297	UNT to Dry Run	Intermittent	HHEI	26	Class 1	2	0.5	Eligible	314	58
Stream RLP-19	41.09623	-80.60281	UNT to Dry Run	Ephemeral	HHEI	19	Class 1	0.5	0.5	Eligible	309	65
Stream RLP-20	41.09471	-80.60326	UNT to Dry Run	Perennial	HHEI	69	Class 2	5	10	Eligible	296	51
Stream RLP-21	41.09329	-80.60297	UNT to Dry Run	Intermittent	HHEI	25	Class 1	2	0.5	Eligible	186	57
Stream RLP-22	41.09023	-80.61075	UNT to Mahoning River	Ephemeral	HHEI	19	Class 1	0.5	0.5	Eligible	56	25
Stream RLP-23	41.08970	-80.61098	UNT to Mahoning River	Ephemeral	HHEI	19	Class 1	1	0.5	Eligible	308	0

TABLE 4

DELINEATED STREAMS WITHIN THE YOUNGSTOWN 138KV REINFORCEMENT PROJECT'S SURVEY BOUNDARY

Report Name	Latitude	Longitude	Waterbody	Flow Regime	Form Used[1,2]	Score[3]	Class or Narrative Description[3]	Bankfull Width (feet)	Maximum Pool Depth (inches)	OEPA 401 WQC Eligibility for NWP[4]	Linear Feet within Survey Boundary	Linear Feet within 65-ft ROW
Stream RLP-24	41.08944	-80.61077	UNT to Mahoning River	Ephemeral	HHEI	13	Class 1	5	0	Eligible	139	66
Stream RLP-25	41.0895	-80.61109	UNT to Mahoning River	Ephemeral	HHEI	18	Class 1	0.5	0.5	Eligible	45	0
Stream RLP-26	41.08281	-80.61053	UNT to Mahoning River	Intermittent	HHEI	26	Class 1	3	1	Eligible	1,178	420
Stream RLP-27	41.08326	-80.61038	UNT to Mahoning River	Ephemeral	HHEI	28	Class 1	3	0.5	Eligible	87	0
Stream RLP-28	41.09229	-80.64333	UNT to Mahoning River	Ephemeral	HHEI	26	Modified Class 1	2	0.5	Eligible	114	7
Sub-Total (12)			**Perennial: 2, Intermittent: 3, and Ephemeral: 7**								**7,102**	**1,437**
Grand-Total (35)[5]			**Perennial: 6[5], Intermittent: 9, and Ephemeral: 20**								**23,937**	**2,374**

1. QHEI = Qualitative Habitat Evaluation Index, HHEI = Headwater Habitat Evaluation Index,
2. NA = Not Assessed (default to the State of Ohio's aquatic use designation)
3. Class or Narrative Description provides the designated beneficial uses for assessed resources identified within the Ohio Administrative Code Chapter 3745-1 Water Quality Standards. In absence of a listed designation for a resource, AECOM included the Category assessment identify by the OEPA's Qualitative Habitat Evaluation Index (Rankin 2006) or Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams, Version 4.1 (Ohio EPA 2020).
4. As defined by OEPA Division of Surface Water Stream Eligibility Map. Available online at: http://oepa.maps.arcgis.com/apps/webappviewer/index.html?id=e6b46d29a38f46229c1eb47deefe49b6
5. Due to Stream RLP-01 being present within the survey boundary and ROW of the common route, preferred route, and alternative route, the grand total number of streams identified within the combined survey area is 35 and not the summation of the number of streams within each sub-total of these alternatives.
6. No streams were identified within the survey area associated with the Riverbend Substation expansion.

3.2.1 Qualitative Habitat Evaluation Index

Four streams identified within the Project's survey boundary were assessed using the QHEI methodology (Appendix C). The QHEI streams totaled 13,559 linear feet within the Project's survey boundary. Representative photographs were taken during the field survey (Appendix D).

Warmwater Habitat Stream –

Stream RLP-01 (Mahoning River), totaling 8,207 linear feet within the Project's survey boundary, is designated as a Warmwater Habitat stream, with a QHEI score of 83.5 (OEPA 2018). Substrates of the Mahoning River were not assessed due to limited accessibility and visual obstruction. The stream generally showed evidence of little bank erosion, high stability, no channel sinuosity, poor channel development, and recovering channelization. Instream cover generally consisted of moderate amounts of overhanging vegetation, rootmats, and rootwads, with sparse amounts of logs and woody debris. Maximum pool depth was estimated greater than one meter and the average bankfull width is approximately 175 feet.

Stream RLP-02, totaling 351 linear feet within the Project's survey boundary, is designated as a Warmwater Habitat stream, with a QHEI score of 22. The substrate of this stream generally consisted of concrete with smaller amounts of silt. The stream generally showed evidence of little bank erosion, no channel sinuosity, poor channel development. Maximum pool depth was 20 inches and the average bankfull width was 10 feet.

Stream RLP-29, totaling 4,521 linear feet within the Project Survey boundary, is designated as a Warmwater Habitat stream, with a QHEI score of 56. The substrate of the stream generally consisted of cobble and boulder. Several areas in the stream had garbage and/or foam draining into the stream. The stream showed no evidence of bank erosion, moderate sinuosity, and good channel development. The maximum pool depth was 18 inches and the average bankfull width was 30 feet.

Coldwater Habitat Stream –

Stream RLP-04, totaling 482 linear feet within the Project's survey boundary, is designated as a Coldwater Habitat stream, with a QHEI score of 51. The substrate of this stream generally consisted of sand, gravel and silt with smaller amounts of cobble, bedrock, and boulder and slabs. The stream generally showed evidence of little bank erosion, low channel sinuosity, and fair channel development. Instream cover generally consisted of sparse amounts of logs or woody debris, and overhanging vegetation. The maximum pool depth was 20 inches and the average bankfull width was 18 feet.

3.2.2 Primary Headwater Habitat Evaluation Index

Thirty-one headwater streams, totaling 9,657 linear feet, were identified within the Project's survey boundary. These streams were categorized as eleven Class 1 PHWM streams, thirteen Modified Class 1 PHWM streams, six Modified Class 2 PHWM streams, and one Class 2 PHWM streams. Completed HHEI forms for each stream are provided in Appendix C. Representative color photographs of selected streams were taken during the field survey and are provided in Appendix D.

Class 1 PHWH Streams – Eleven streams, totaling 3,243 linear feet within the Project's survey boundary, with scores ranging from 13 to 28 were identified during the field investigations. Eight of these streams exhibited ephemeral flow regime and fthreeour exhibited intermittent flow regimes. The substrates primarily consisted of gravel, sand, silt, and leaf pack/woody debris with lesser amounts of fine detritus and clay or hardpan. The maximum pool depth for the streams ranged from 0 to 1 inch, and average bankfull widths ranged from 0.5 to 5 feet.

Modified Class 1 PHWH Streams – Thirteen streams, totaling 2,318 linear feet within the Project's survey boundary, with scores ranging from 12 to 30 were identified during the field investigations. Twelve of these streams exhibited ephemeral flow regime and one exhibited intermittent flow regime. The substrates primarily consisted of silt, gravel, and leaf pack/woody debris, with lesser amounts of cobble, sand, artificial, and clay or hardpan. The streams showed evidence of stream channel modification (e.g., channelization, culverting, etc.) that resulted in the Modified designation. The maximum pool depth for the streams ranged from 0 to 2 inches, and average bankfull widths ranged from 0.5 to 3 feet.

Class 2 PHWH Streams – Three streams, totaling 2,357 linear feet within the Project's survey boundary, with scores ranging from 39 to 69, were identified during the field investigations. One of these streams exhibited intermittent flow regime and two exhibited perennial flow regimes. with substrate composed of gravel and silt, with lesser amounts of sand and leaf pack/woody debris. The maximum pool depth ranged from 1 to 10 inches and average bankfull width ranged from 4 to 7 feet.

Modified Class 2 PHWH Streams – Four streams, totaling 1,741 linear feet within the Project's survey boundary, with scores ranging from 41 to 67, were identified during the field investigations. All exhibited intermittent flow regimes. The substrates primarily consisted of gravel, silt, and cobble, with lesser amounts of sand, artificial, and leaf pack/woody debris. The streams showed evidence of stream channel modification (e.g., channelization, culverting, etc.) that resulted in the streams receiving a Modified designation. The maximum pool depth ranged from 1 to 10 inches, and average bankfull widths ranged from 2.5 to 7 feet.

Class 3 PHWH Stream **-** No Class 3 streams were identified within the Project survey boundary.

3.3 PONDS

No ponds were delineated within the Project's survey boundary.

4.0 SUMMARY

The ecological survey of the Project's survey boundary identified a total of 34 wetland complexes and 35 streams. No ponds were delineated within the Project's survey boundary. The 34 wetland complexes that were identified as either ORAM Category 1 or Category 2 wetlands within the Project's survey boundary and were composed of three different wetland habitat types including: 15 PEM wetlands, five PSS wetlands, five PFO wetlands, three PEM/PFO wetland complexes, three PEM/PSS wetland complexes, two PSS/PFO wetland complexes, and one PEM/PSS/PFO wetland complex. No ORAM Category 3 wetlands were identified within the Project's survey boundary.

The 35 streams identified within the Project's survey boundary include 20 ephemeral streams, nine intermittent streams, and six perennial streams. Thirty-one streams were assessed using the HHEI methodology (drainage area less than 1 mi^2) and four streams were assessed using the QHEI methodology (drainage area greater than 1 mi^2). Crab Creek (RLP-02) and Mahoning River (RLP-01) have an existing OEPA aquatic use habitat designation of WWH. Dry Run (RLP-04), located between Oak Street (RM 1.42) to Wilson Avenue (RM 0.31), has an existing OEPA aquatic use habitat designation of CWH and Dry Run (RLP-29) is listed as a WWH.

No ponds were delineated within the Project's survey boundary.

The current regulatory regime has changed multiple times in the past eight years, with the potential for additional changes in the near future. Therefore, the jurisdictional status of ephemeral streams shall be left to the federal review, if required.

The information contained in this wetland delineation report is for a survey boundary that may be much larger than the actual Project limits-of-disturbance; therefore, lengths and acreages listed in this report may not constitute the actual impacts of the Project defined in subsequent permit applications. If necessary, a separate report that identifies the actual Project impacts will be provided with agency submittals.

The field survey results presented herein apply to the existing and reasonably foreseeable site conditions at the time of our assessment. They cannot apply to site changes of which AECOM is unaware and has not had the opportunity to review. Changes in the condition of a property may

occur with time due to natural processes or human impacts at the project site or on adjacent properties. Changes in applicable standards may also occur as a result of legislation or the expansion of knowledge over time. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond the control of AECOM.

5.0 REFERENCES

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FIGURES

41.104186
-80.66079
Riverbend Substation
41.10281
-80.595436
Lincoln Park Substation
Youngstown
Mahoning County
Campbell
YOUNGSTOWN
CAMPBELL
Haselton
Fosterville
Lake Glacier
McKelvey Lake
East Side
South Side
Side
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LEGEND

- Existing Substation
- Alternate Route
- Common Route
- Preferred Route
- County Boundary
- Ohio USGS 7.5" Topographical Quandrangle

0 0.5 1
Miles

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps

MI
IN
OH
KY
WV
PA
Mahoning County

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Youngstown 138kV Reinforcement Project

FIGURE 1
OVERVIEW MAP

JOB NO. 60595883

AECOM

Riverbend Substation

R2UBG

R5UBH

R5UBH

LEGEND

- Existing Substation
- Access Road
- Alternate Route
- Common Route
- Preferred Route
- Survey Boundary
- National Wetland Inventory (NWI)

Soil Legend

- BgB
- BgC
- BtB
- Ck
- ClD
- CmC
- CoB
- CoC
- DkF
- FcB
- FhB
- JtB
- JuB
- Lc
- LdE2
- RaB
- RuB
- Sb
- Se
- Sg
- Ua
- W
- WbB
- Wc

0 200 400

Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps

Youngstown

680

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Youngstown 138kV Reinforcement Project

FIGURE 2
SHEET 1 of 22
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60595883

AECOM

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R5UBH

R2UBG

LEGEND

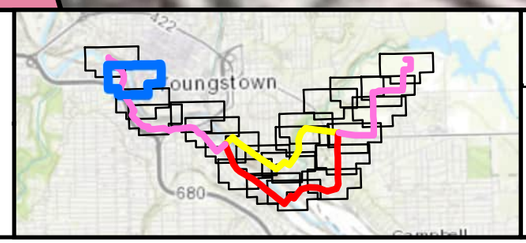
- Existing Substation
- Access Road
- Alternate Route
- Common Route
- Preferred Route
- Survey Boundary
- National Wetland Inventory (NWI)

Soil Legend

- BgB
- BgC
- BtB
- Ck
- ClD
- CmC
- CoB
- CoC
- DkF
- FcB
- FhB
- JtB
- JuB
- Lc
- LdE2
- RaB
- RuB
- Sb
- Se
- Sg
- Ua
- W
- WbB
- Wc

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps



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Youngstown 138kV Reinforcement Project

FIGURE 2
SHEET 2 of 22
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60595883

AECOM

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R5UBH

R2UBG

LEGEND

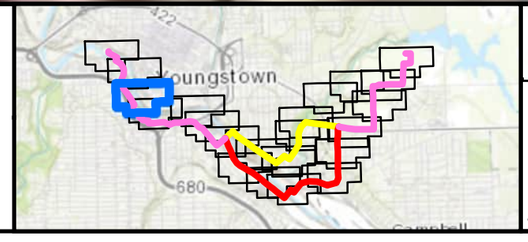
- Existing Substation
- Access Road
- Alternate Route
- Common Route
- Preferred Route
- Survey Boundary
- National Wetland Inventory (NWI)

Soil Legend

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0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps



ATSI

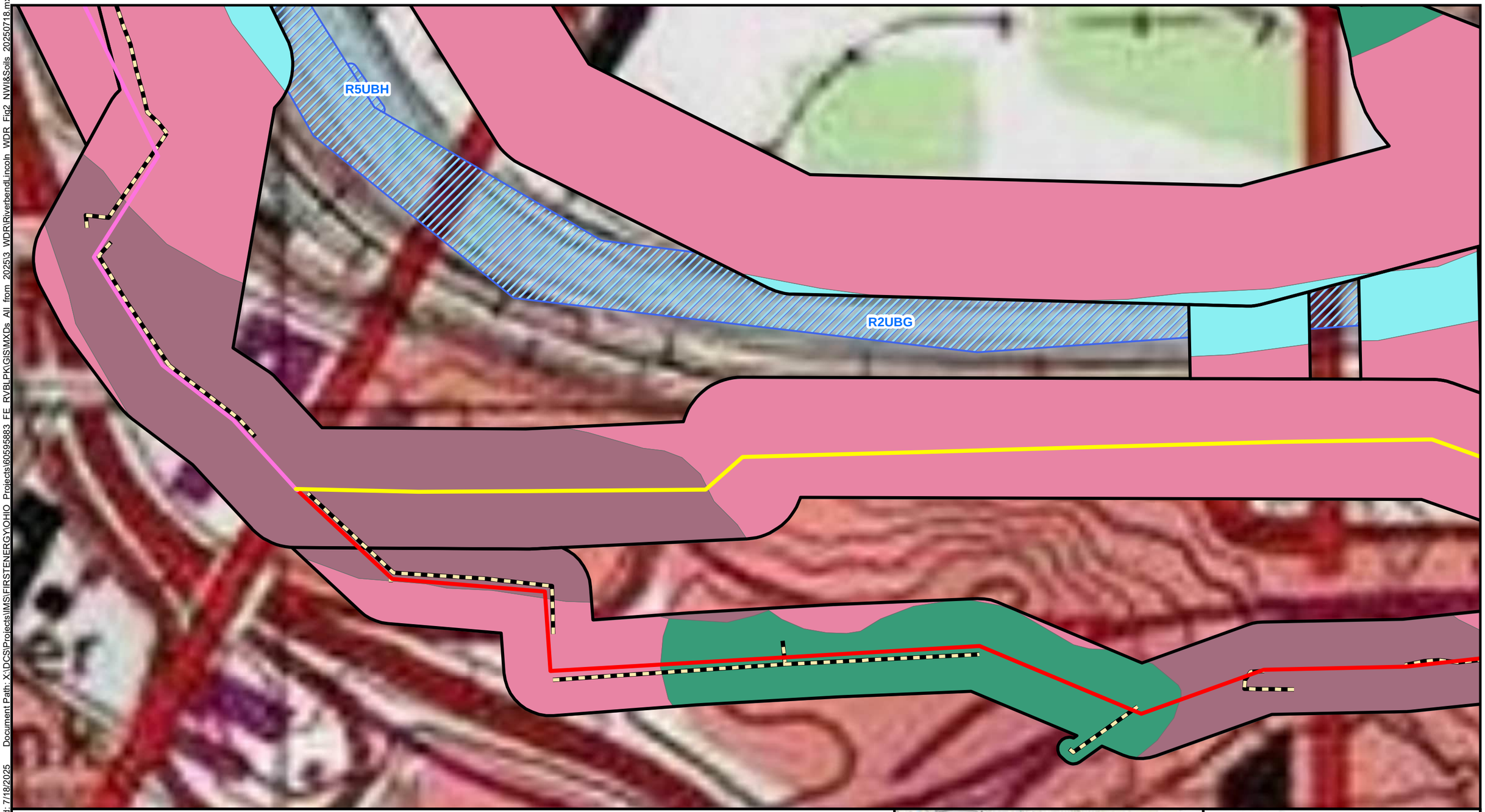
Youngstown 138kV Reinforcement Project

FIGURE 2
SHEET 3 of 22
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60595883

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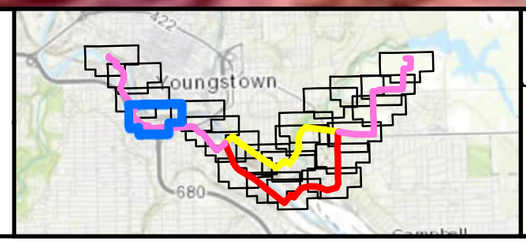
- Existing Substation
- Access Road
- Alternate Route
- Common Route
- Preferred Route
- Survey Boundary
- National Wetland Inventory (NWI)

Soil Legend

BgB, BgC, BtB, Ck, CID, CmC, CoB, CoC, DkF, FcB, FhB, JtB, JuB, Lc, LdE2, RaB, RuB, Sb, Se, Sg, Ua, W, WbB, Wc

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps



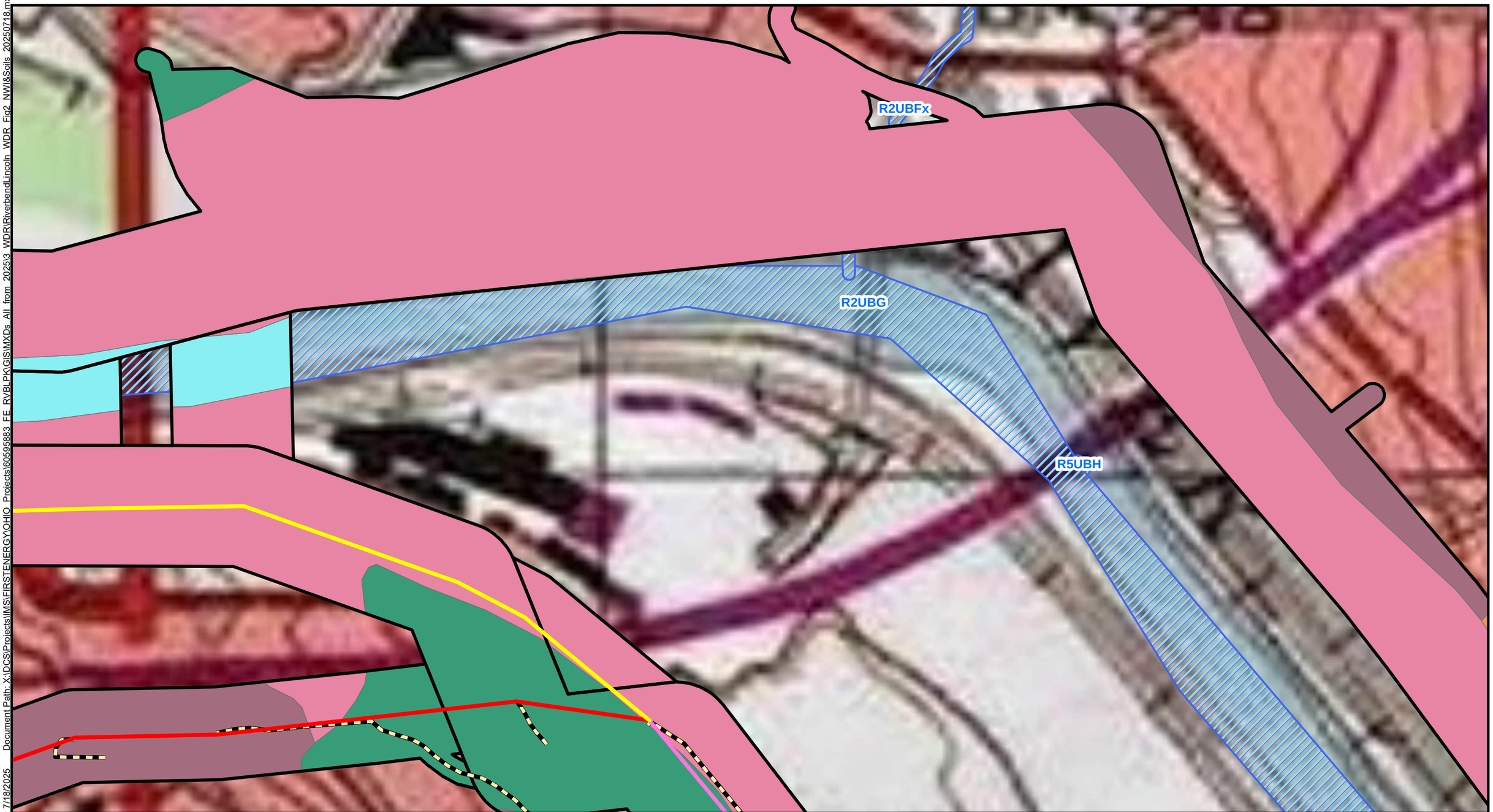
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Youngstown 138kV Reinforcement Project

FIGURE 2
SHEET 4 of 22
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60595883

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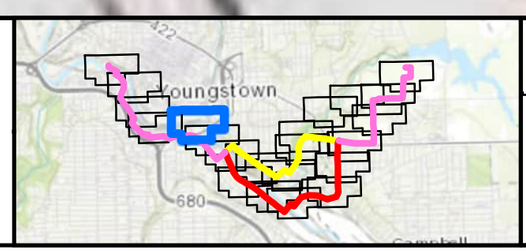
- Existing Substation
- Access Road
- Alternate Route
- Common Route
- Preferred Route
- Survey Boundary
- National Wetland Inventory (NWI)

Soil Legend

- BgB
- BgC
- BtB
- Ck
- ClD
- CmC
- CoB
- CoC
- DkF
- FcB
- FhB
- JtB
- JuB
- Lc
- LdE2
- RaB
- RuB
- Sb
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- Sg
- Ua
- W
- WbB
- Wc

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps



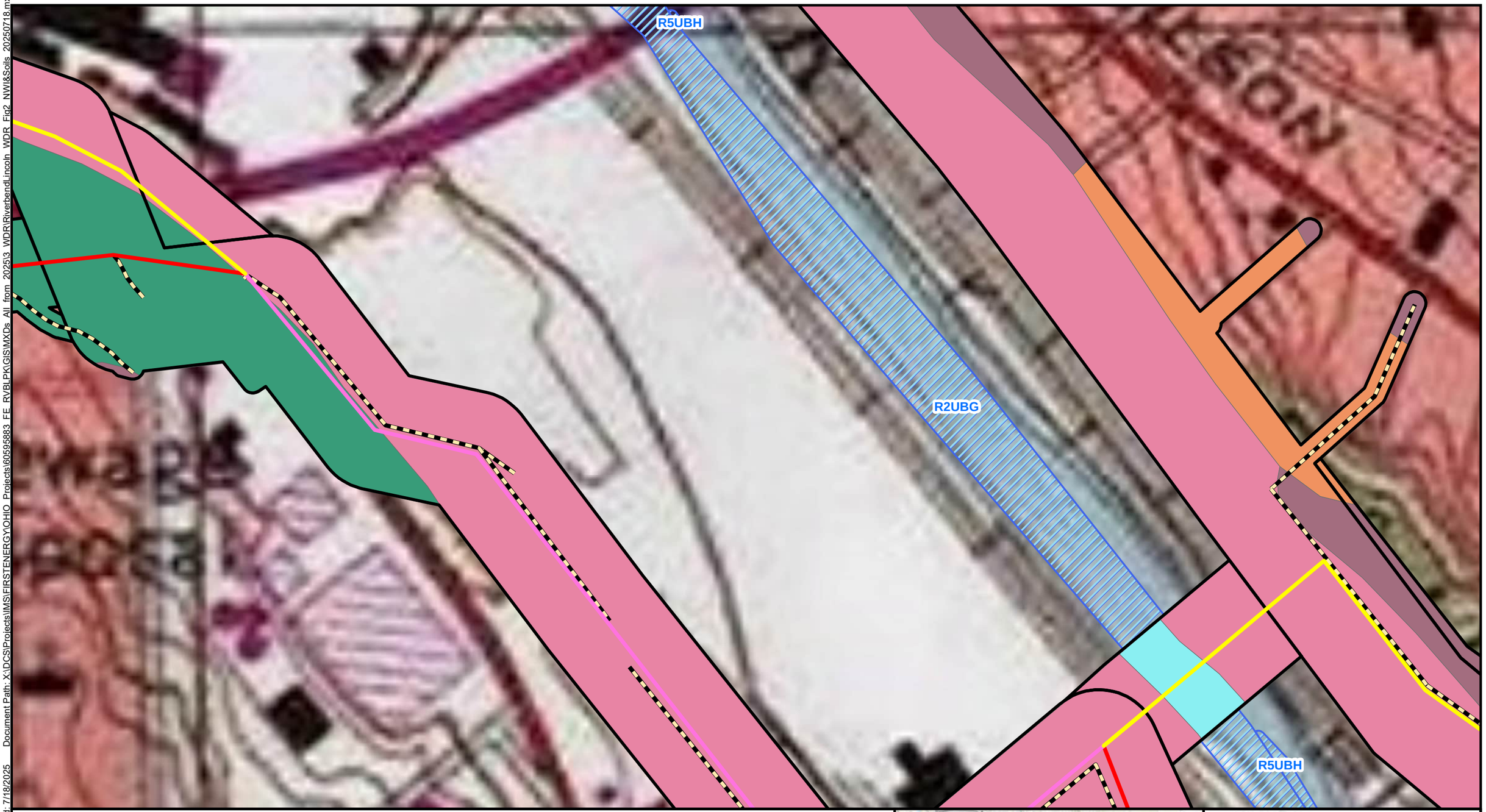
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FIGURE 2
SHEET 5 of 22
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

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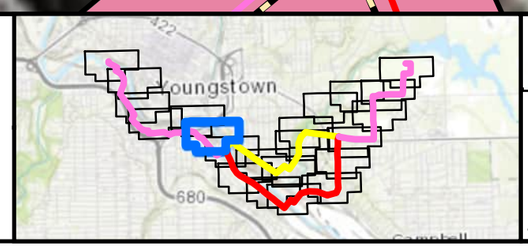
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- Access Road
- Alternate Route
- Common Route
- Preferred Route
- Survey Boundary
- National Wetland Inventory (NWI)

Soil Legend

- BgB
- BgC
- BtB
- Ck
- ClD
- CmC
- CoB
- CoC
- DkF
- FcB
- FhB
- JtB
- JuB
- Lc
- LdE2
- RaB
- RuB
- Sb
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- Wc

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps



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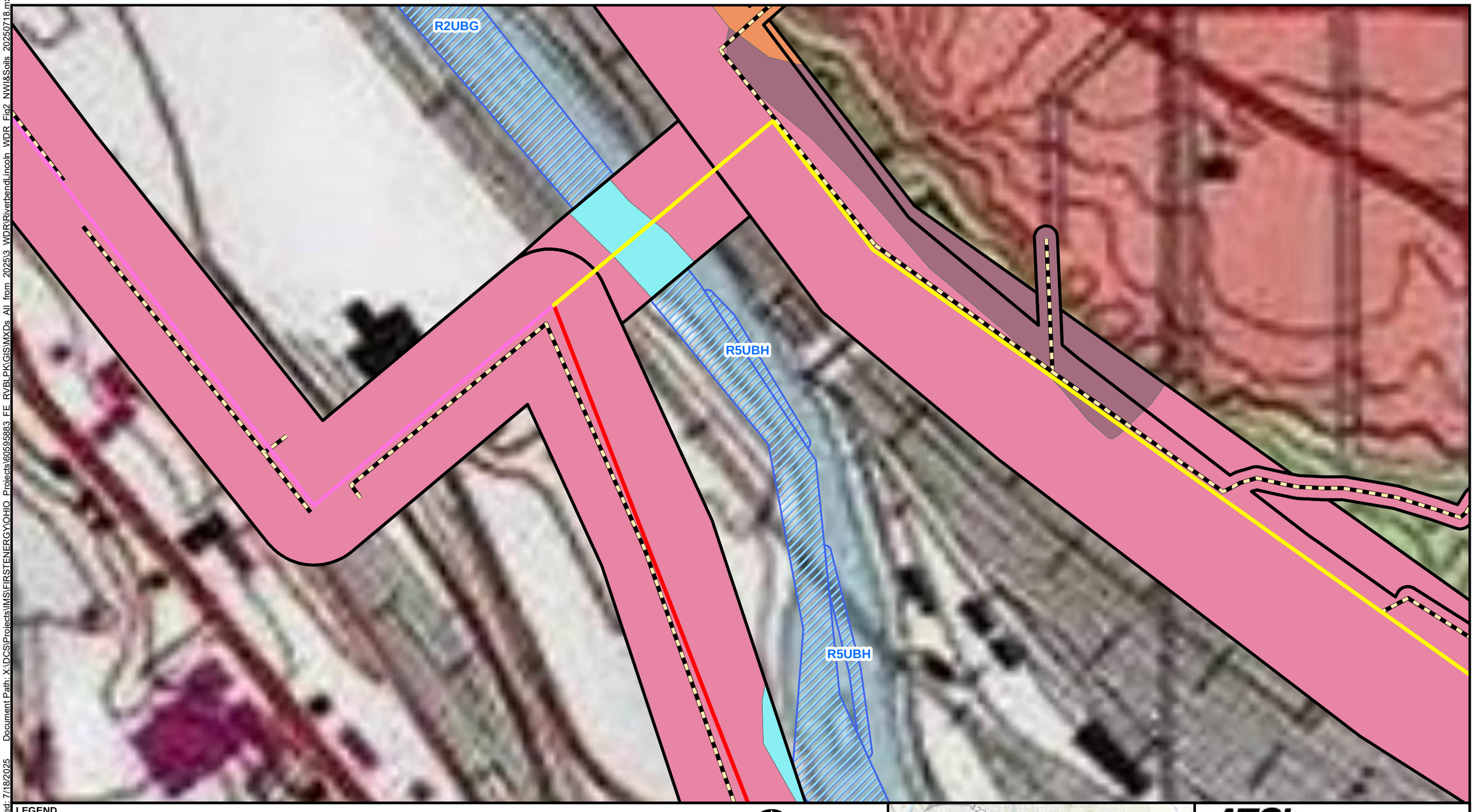
Youngstown 138kV Reinforcement Project

FIGURE 2
SHEET 6 of 22
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60595883

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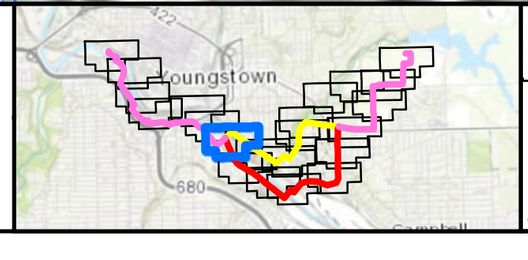
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- Access Road
- Alternate Route
- Common Route
- Preferred Route
- Survey Boundary
- National Wetland Inventory (NWI)

Soil Legend

BgB	Ck	FcB	RaB	W			
BgC	ClD	FhB	RuB	WbB			
BtB	CmC	JtB	Sb	Wc			
	CoB	JuB	Se				
	CoC	Lc	Sg				
	DkF	LdE2	Ua				

0 200 400
Feet

BASE MAP SOURCE:
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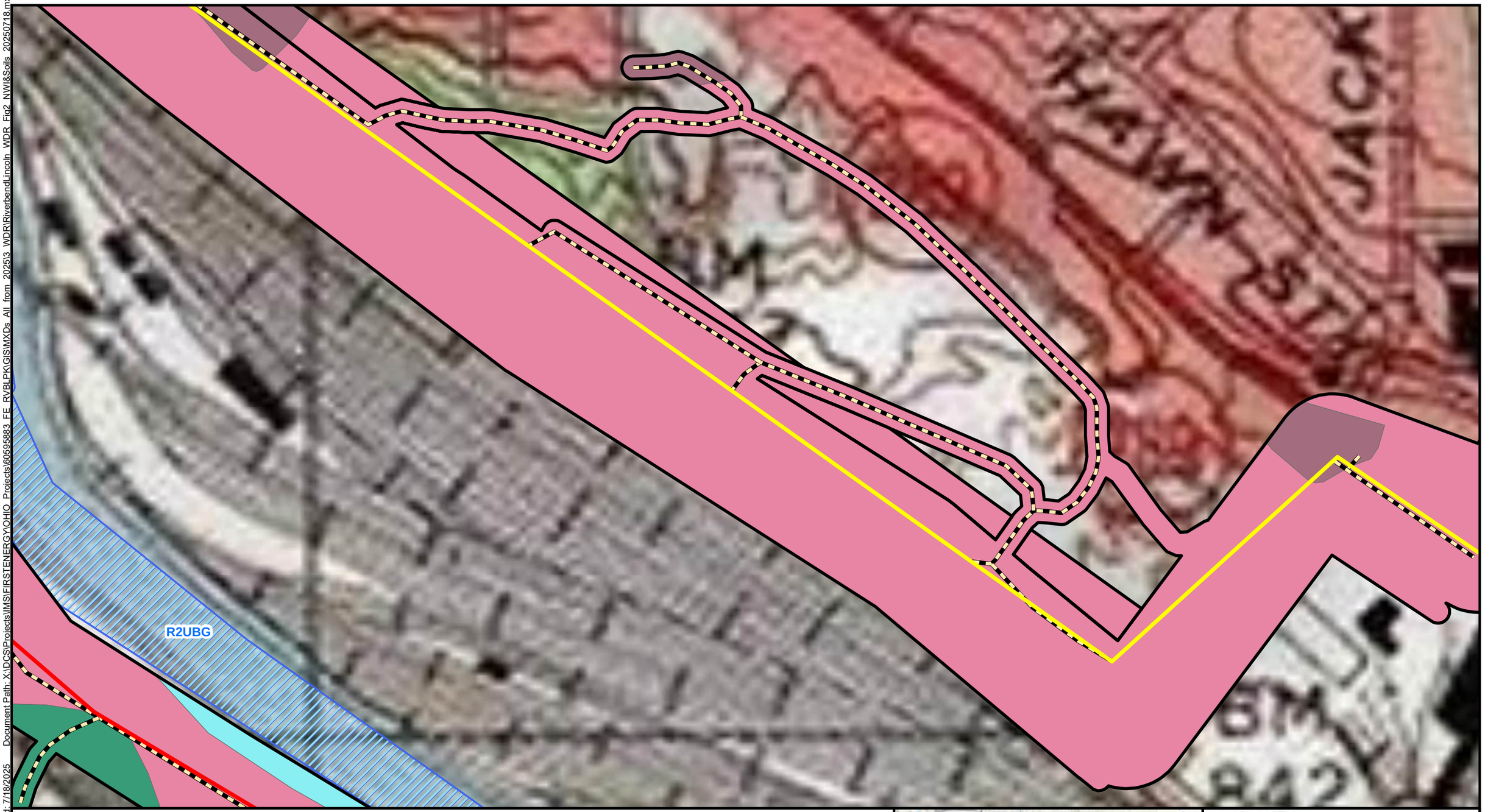
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FIGURE 2
SHEET 7 of 22
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60595883

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R2UBG
R2UBG
R2UBG

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R3UBH

R2UBG

LEGEND

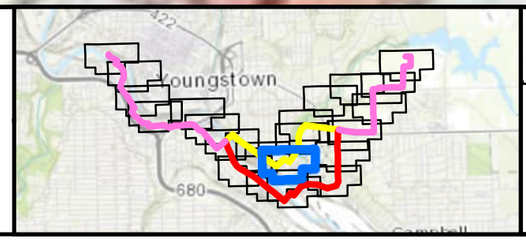
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- Access Road
- Alternate Route
- Common Route
- Preferred Route
- Survey Boundary
- National Wetland Inventory (NWI)

Soil Legend

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0 200 400
Feet

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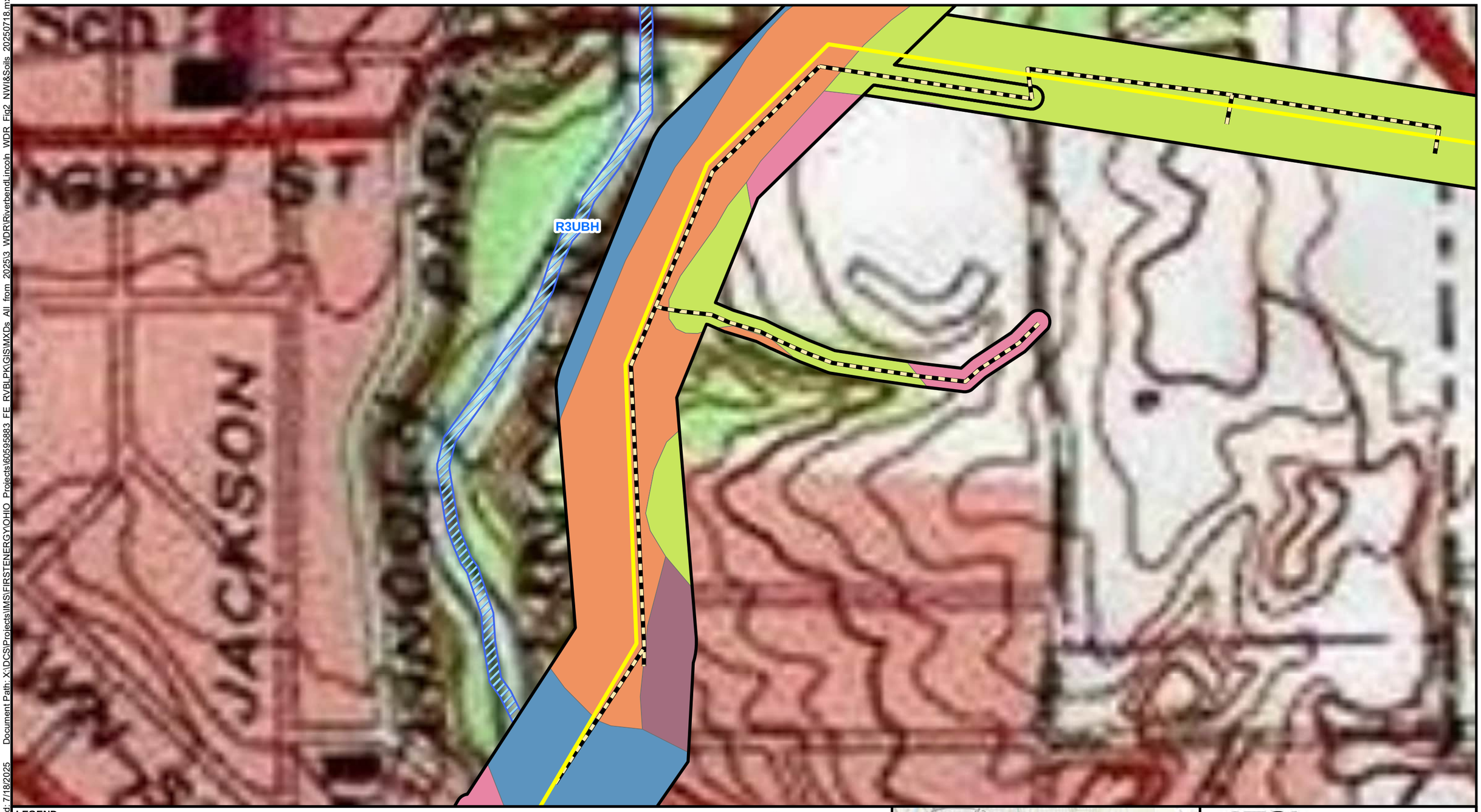
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Youngstown 138kV Reinforcement Project

FIGURE 2
SHEET 9 of 22
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60595883

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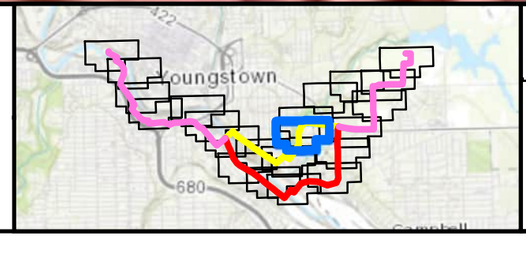
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- Access Road
- Alternate Route
- Common Route
- Preferred Route
- Survey Boundary
- National Wetland Inventory (NWI)

Soil Legend

BgB	Ck	FcB	RaB	W		
BgC	ClD	FhB	RuB	WbB		
BtB	CmC	JtB	Sb	Wc		
	CoB	JuB	Se			
	CoC	Lc	Sg			
	DkF	LdE2	Ua			

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps



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Youngstown 138kV Reinforcement Project

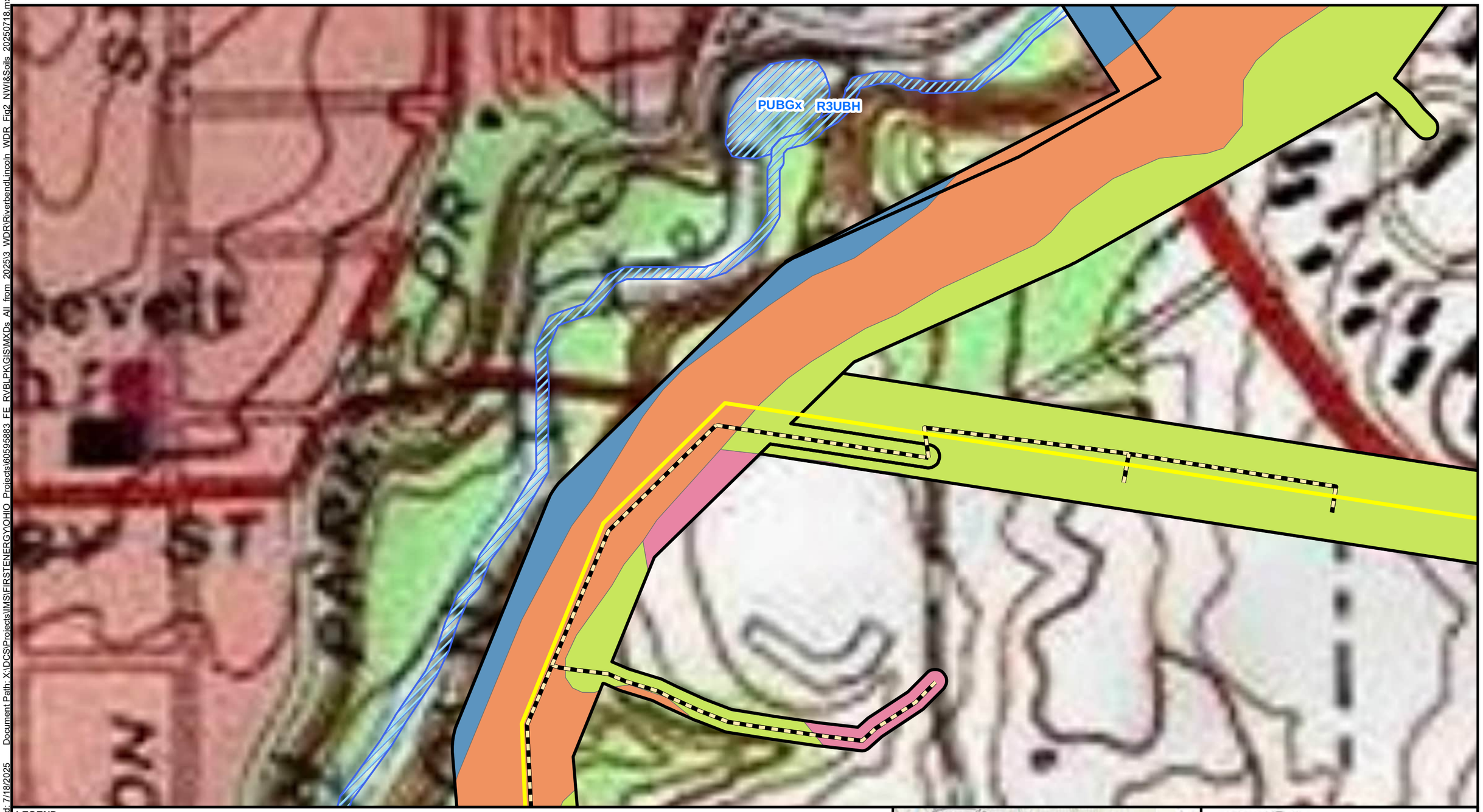
FIGURE 2
SHEET 10 of 22
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60595883

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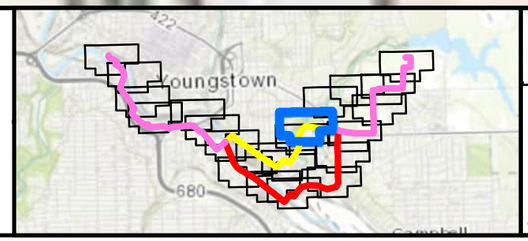
- Existing Substation
- Access Road
- Alternate Route
- Common Route
- Preferred Route
- Survey Boundary
- National Wetland Inventory (NWI)

Soil Legend

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0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps



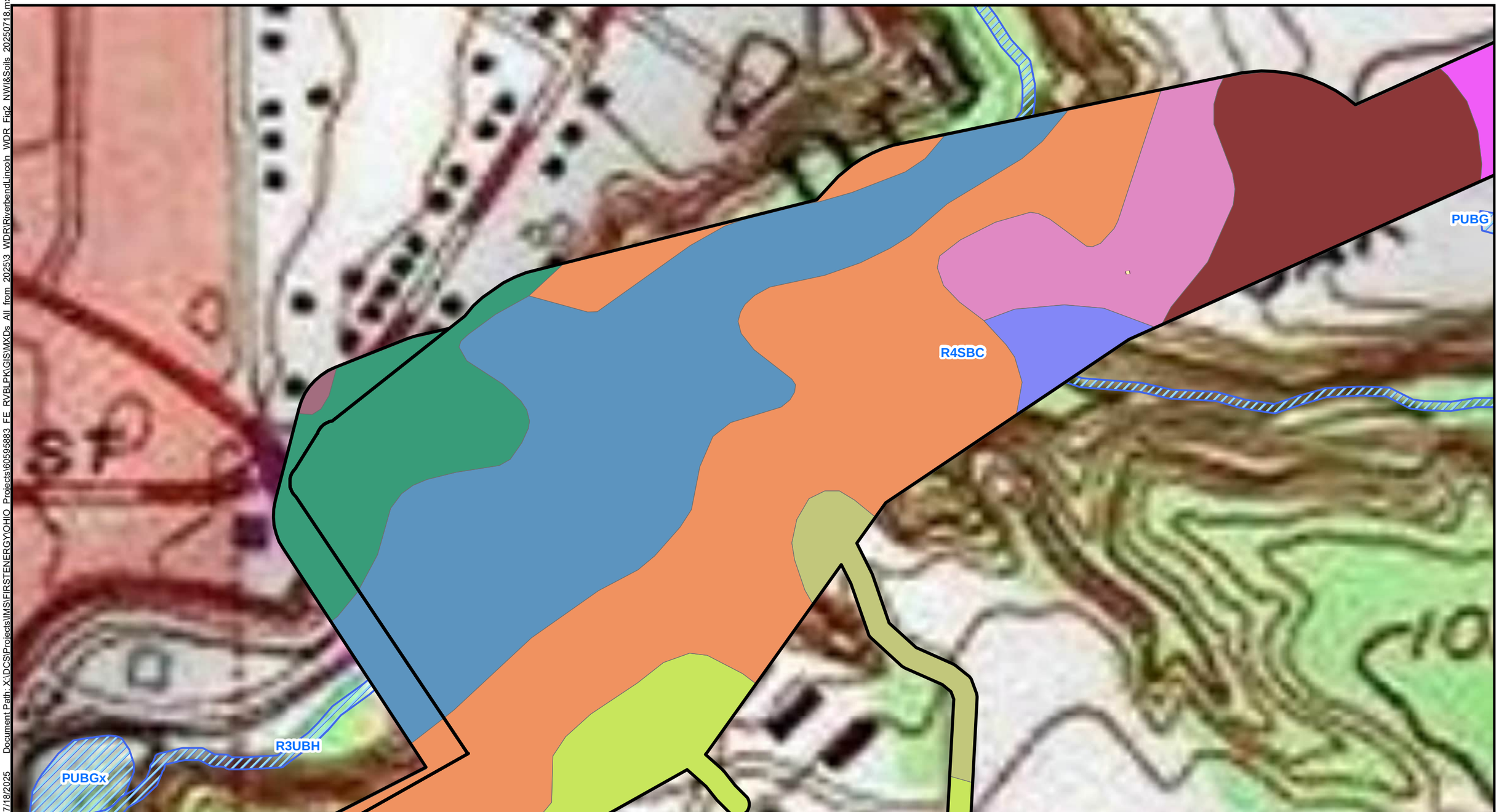
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Youngstown 138kV Reinforcement Project

FIGURE 2
SHEET 11 of 22
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60595883

AECOM



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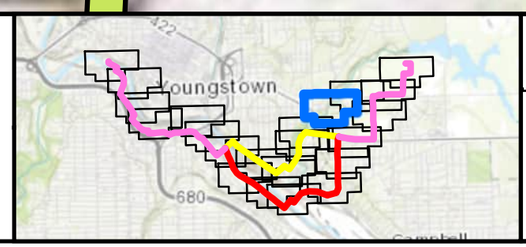
- Existing Substation
- Access Road
- Alternate Route
- Common Route
- Preferred Route
- Survey Boundary
- National Wetland Inventory (NWI)

Soil Legend

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BgC	ClD	FhB	RuB	WbB	
BtB	CmC	JtB	Sb	Wc	
	CoB	JuB	Se		
	CoC	Lc	Sg		
	DkF	LdE2	Ua		

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps



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Youngstown 138kV Reinforcement Project

FIGURE 2
SHEET 12 of 22
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60595883

AECOM

R3UBH

R4SBC

PEM1C

PUBG

R4SBC

LEGEND

- Existing Substation
- Access Road
- Alternate Route
- Common Route
- Preferred Route
- Survey Boundary
- National Wetland Inventory (NWI)

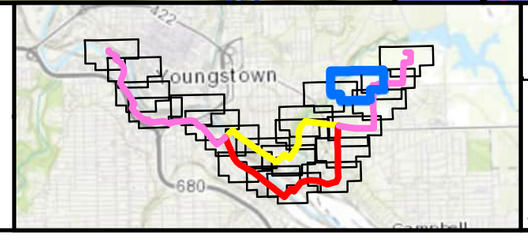
Soil Legend

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BgC	ClD	FhB	RuB	WbB	
BtB	CmC	JtB	Sb	Wc	
	CoB	JuB	Se		
	CoC	Lc	Sg		
	DkF	LdE2	Ua		

0 200 400

Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps



ATSI

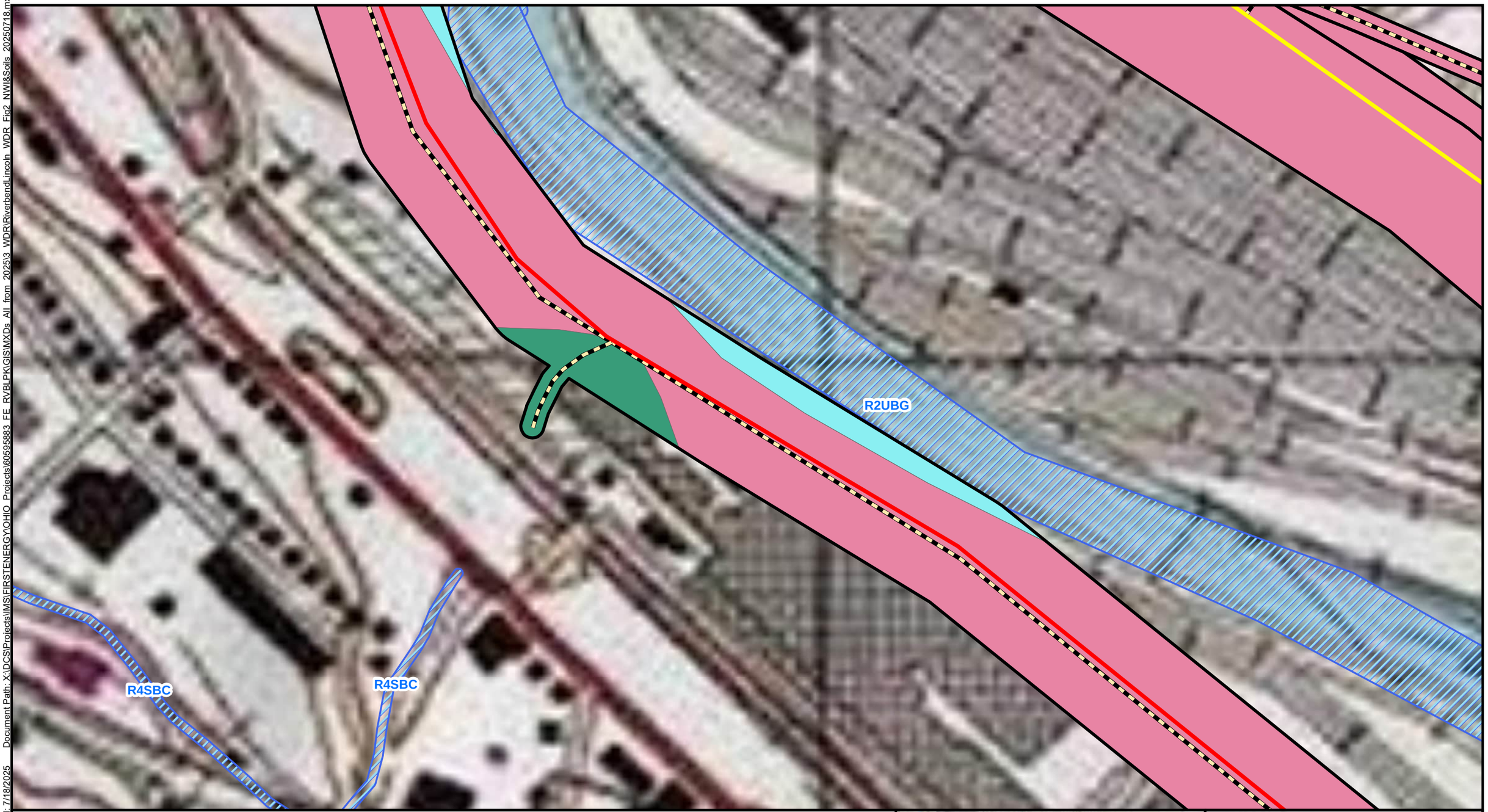
Youngstown 138kV Reinforcement Project

FIGURE 2
SHEET 13 of 22
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60595883

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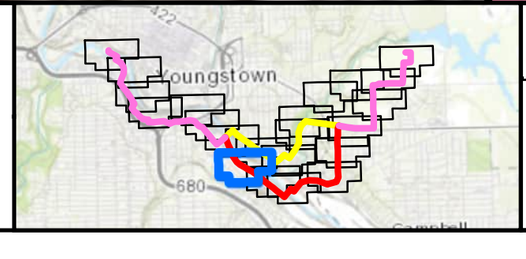
- Existing Substation
- Access Road
- Alternate Route
- Common Route
- Preferred Route
- Survey Boundary
- National Wetland Inventory (NWI)

Soil Legend

- BgB
- BgC
- BtB
- Ck
- ClD
- CmC
- CoB
- CoC
- DkF
- FcB
- FhB
- JtB
- JuB
- Lc
- LdE2
- RaB
- RuB
- Sb
- Se
- Sg
- Ua
- W
- WbB
- Wc

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps



ATSI

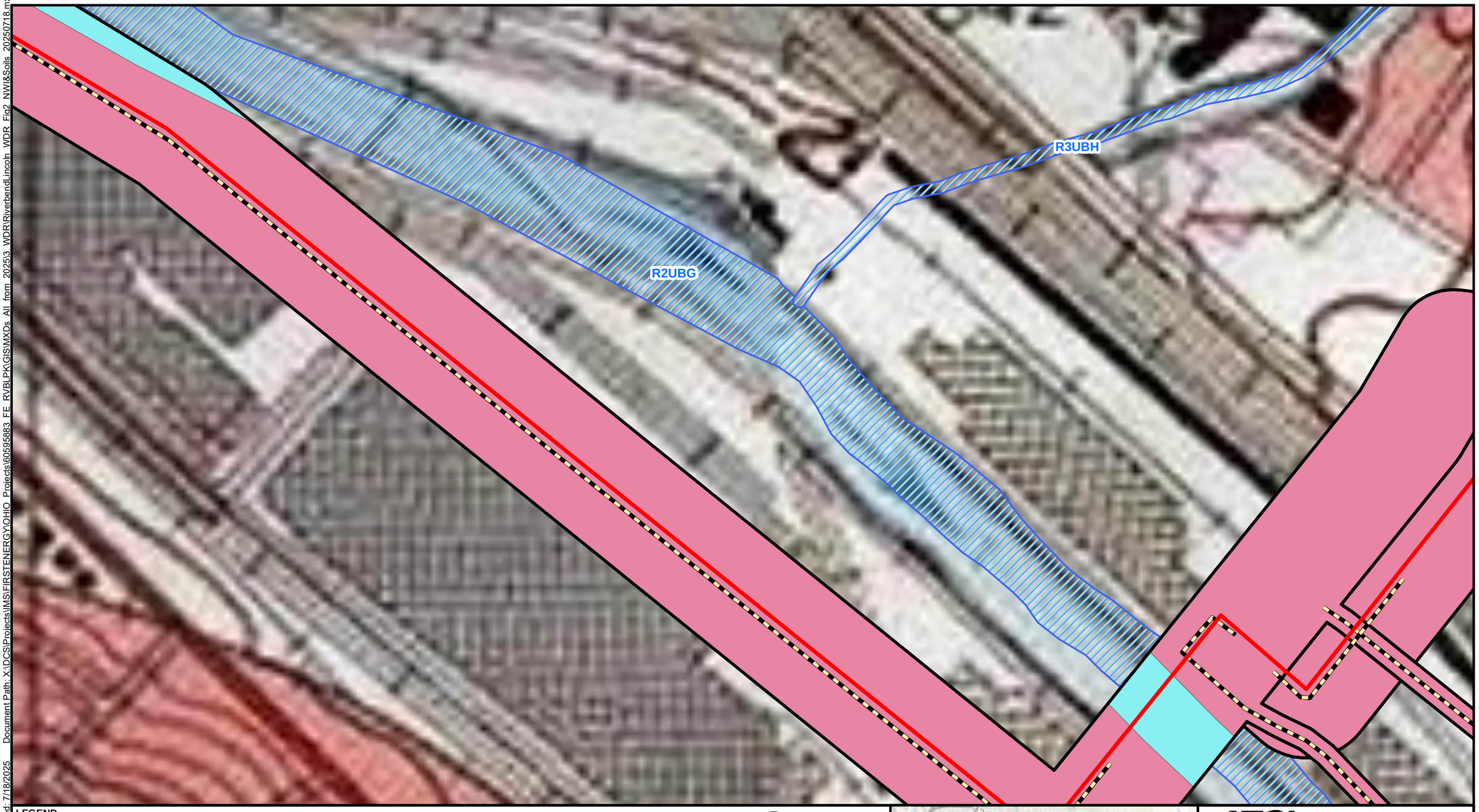
Youngstown 138kV Reinforcement Project

FIGURE 2
SHEET 14 of 22
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60595883

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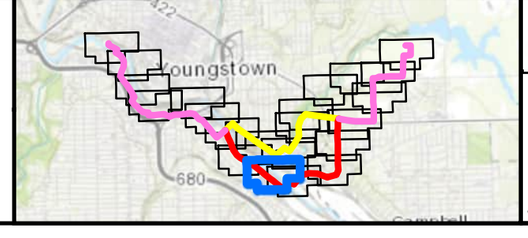
- Existing Substation
- Access Road
- Alternate Route
- Common Route
- Preferred Route
- Survey Boundary
- National Wetland Inventory (NWI)

Soil Legend

BgB, BgC, BtB, Ck, ClD, CmC, CoB, CoC, DkF, FcB, FhB, JtB, JuB, Lc, LdE2, RaB, RuB, Sb, Se, Sg, Ua, W, WbB, Wc

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps



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Youngstown 138kV Reinforcement Project

FIGURE 2
SHEET 15 of 22
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60595883

AECOM

R3UBH

R2UBG

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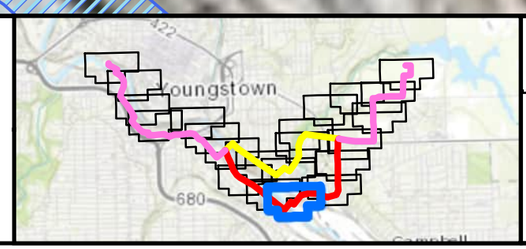
- Existing Substation
- Access Road
- Alternate Route
- Common Route
- Preferred Route
- Survey Boundary
- National Wetland Inventory (NWI)

Soil Legend

BgB, BgC, BtB, Ck, ClD, CmC, CoB, CoC, DkF, FcB, FhB, JtB, JuB, Lc, LdE2, RaB, RuB, Sb, Se, Sg, Ua, W, WbB, Wc

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps



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Youngstown 138kV Reinforcement Project

FIGURE 2
SHEET 16 of 22
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60595883

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Date Saved: 7/18/2025

PFO1C

R4SBC

R4SBC

LEGEND

- Existing Substation
- Access Road
- Alternate Route
- Common Route
- Preferred Route
- Survey Boundary
- National Wetland Inventory (NWI)

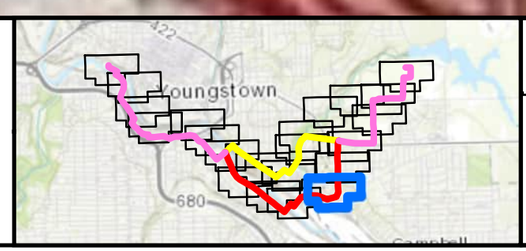
Soil Legend

- BgB
- BgC
- BtB
- Ck
- ClD
- CmC
- CoB
- CoC
- DkF
- FcB
- FhB
- JtB
- JuB
- Lc
- LdE2
- RaB
- RuB
- Sb
- Se
- Sg
- Ua
- W
- WbB
- Wc

0 200 400

Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps



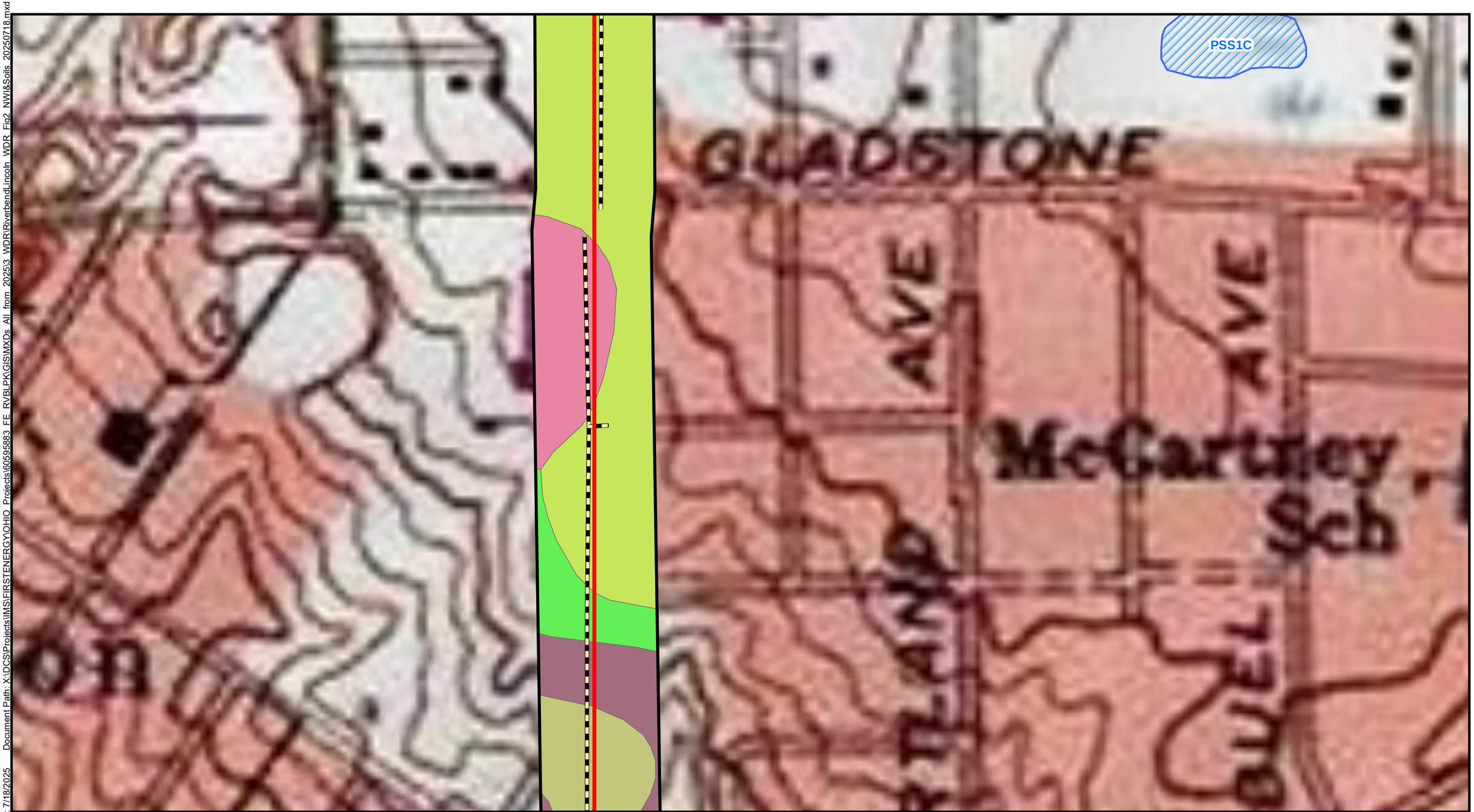
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Youngstown 138kV Reinforcement Project

FIGURE 2
SHEET 17 of 22
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60595883

AECOM



LEGEND

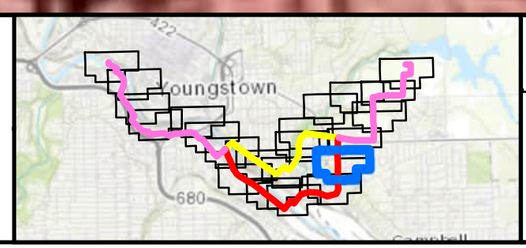
- Existing Substation
- Access Road
- Alternate Route
- Common Route
- Preferred Route
- Survey Boundary
- National Wetland Inventory (NWI)

Soil Legend

BgB, BgC, BtB, Ck, ClD, CmC, CoB, CoC, DkF, FcB, FhB, JtB, JuB, Lc, LdE2, RaB, RuB, Sb, Se, Sg, Ua, W, WbB, Wc

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps



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Youngstown 138kV Reinforcement Project

FIGURE 2
SHEET 18 of 22
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60595883

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PFO1/EM1C

PSS1C

PEM1C

PSS1C

GUADSTONE

AVE

LEGEND

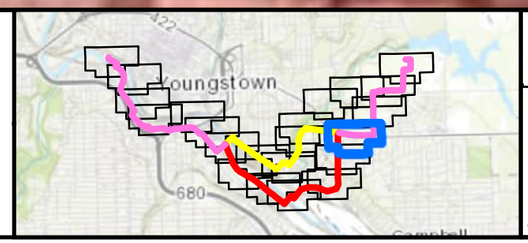
- Existing Substation
- Access Road
- Alternate Route
- Common Route
- Preferred Route
- Survey Boundary
- National Wetland Inventory (NWI)

Soil Legend

- BgB
- BgC
- BtB
- Ck
- ClD
- CmC
- CoB
- CoC
- DkF
- FcB
- FhB
- JtB
- JuB
- Lc
- LdE2
- RaB
- RuB
- Sb
- Se
- Sg
- Ua
- W
- WbB
- Wc

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps



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FIGURE 2
SHEET 19 of 22
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60595883

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PUBG

R4SBC

PSS1C

1050

DR

DUNDEE

LILBURN

EDGEFIELD

LEGEND

- Existing Substation
- Access Road
- Alternate Route
- Common Route
- Preferred Route
- Survey Boundary
- National Wetland Inventory (NWI)

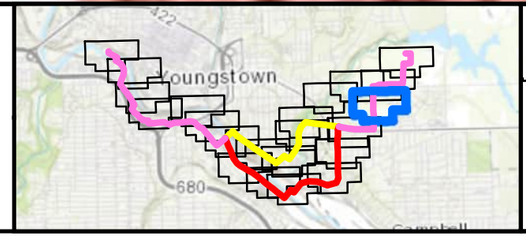
Soil Legend

- BgB
- BgC
- BtB
- Ck
- ClD
- CmC
- CoB
- CoC
- DkF
- FcB
- FhB
- JtB
- JuB
- Lc
- LdE2
- RaB
- RuB
- Sb
- Se
- Sg
- Ua
- W
- WbB
- Wc

0 200 400

Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps



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Youngstown 138kV Reinforcement Project

FIGURE 2
SHEET 20 of 22
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60595883

AECOM

PEM1C

PSS1C

R4SBC

R4SBC

R4SBC

Haddo

Sc

DR

GREELE

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Date Saved: 7/18/2025

LEGEND

- Existing Substation
- Access Road
- Alternate Route
- Common Route
- Preferred Route
- Survey Boundary
- National Wetland Inventory (NWI)

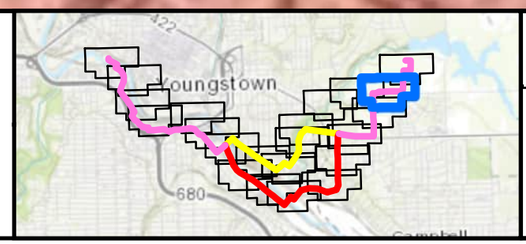
Soil Legend

- BgB
- BgC
- BtB
- Ck
- ClD
- CmC
- CoB
- CoC
- DkF
- FcB
- FhB
- JtB
- JuB
- Lc
- LdE2
- RaB
- RuB
- Sb
- Se
- Sg
- Ua
- W
- WbB
- Wc

0 200 400

Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps



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Youngstown 138kV Reinforcement Project

FIGURE 2
SHEET 21 of 22
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60595883

AECOM

Lincoln Park Substation

PSS1C

PSS1C

PSS1C

LEGEND

- Existing Substation
- Access Road
- Alternate Route
- Common Route
- Preferred Route
- Survey Boundary
- National Wetland Inventory (NWI)

Soil Legend

BgB	Ck	FcB	RaB	W	
BgC	ClD	FhB	RuB	WbB	
BtB	CmC	JtB	Sb	Wc	
	CoB	JuB	Se		
	CoC	Lc	Sg		
	DkF	LdE2	Ua		

0 200 400

Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps

Youngstown

680

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Youngstown 138kV Reinforcement Project

FIGURE 2
SHEET 22 of 22
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60595883

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Stream RLP-01
Mahoning River
QHEI:
145 FT

Stream RLP-01
Mahoning River
QHEI:
145 FT

LEGEND

- Existing Substation
- Upland Data Point
- Wetland Data Point
- Proposed Access Road
- Railroad

Lincoln Park-Riverbend 138 kV Transmission Line

- Alternate Route
- Common Route
- Preferred Route
- Delineated Stream (HHEI)
- Delineated Stream (QHEI)
- Delineated Wetland
- Survey Boundary
- Proposed Riverbend Substation Expansion
- County Boundary

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, Bing Maps Aerial

ATSI

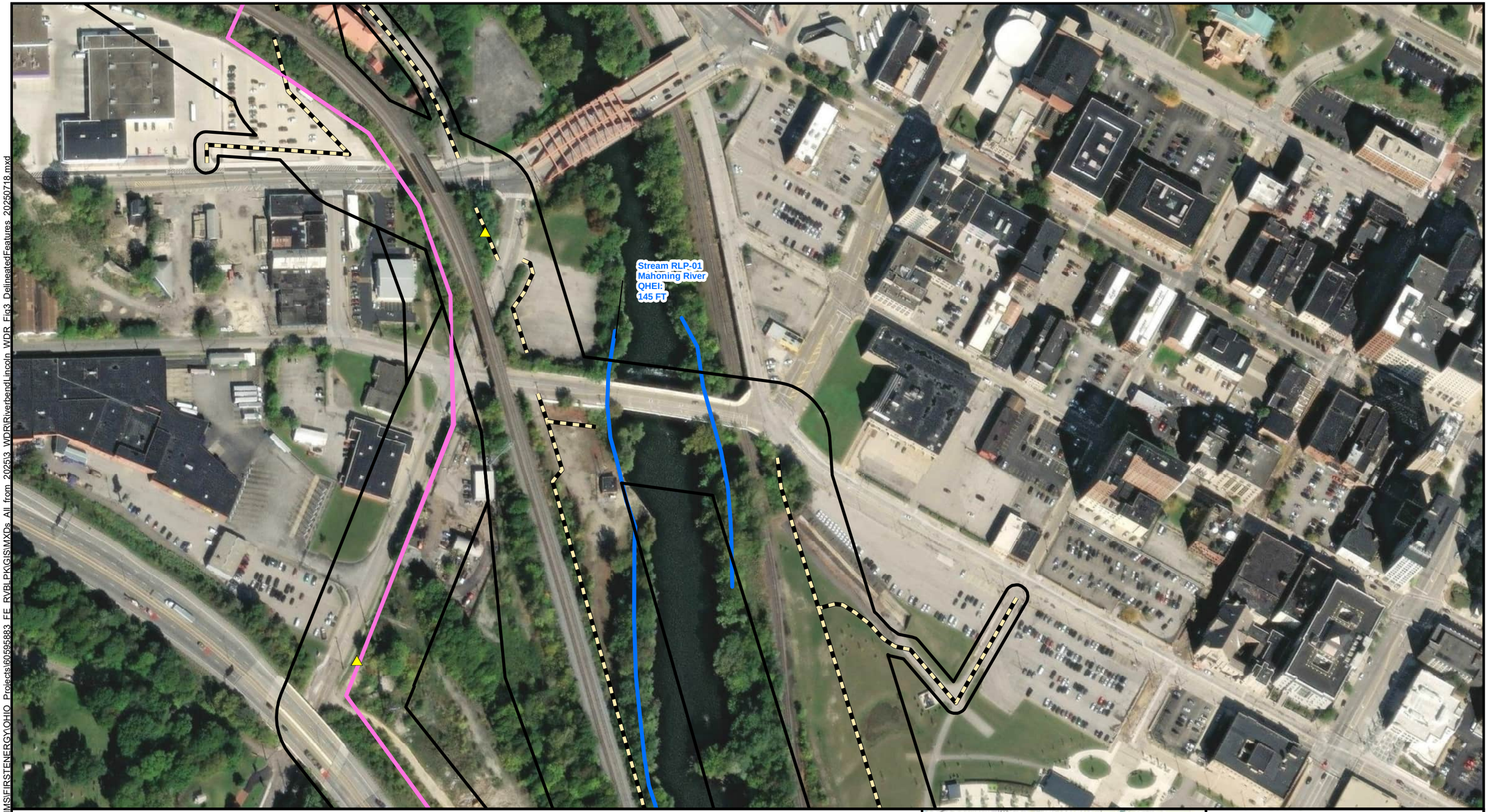
Youngstown 138kV Reinforcement Project

FIGURE 3
SHEET 1 of 22
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60595883

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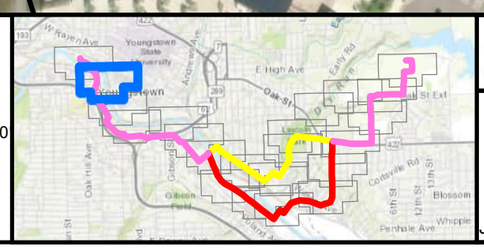
- Existing Substation
- Upland Data Point
- Wetland Data Point
- Proposed Access Road
- Railroad

Lincoln Park-Riverbend 138 kV Transmission Line

- Alternate Route
- Common Route
- Preferred Route
- Delineated Stream (HHEI)
- Delineated Stream (QHEI)
- Delineated Wetland
- Survey Boundary
- Proposed Riverbend Substation Expansion
- County Boundary

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, Bing Maps Aerial



ATSI

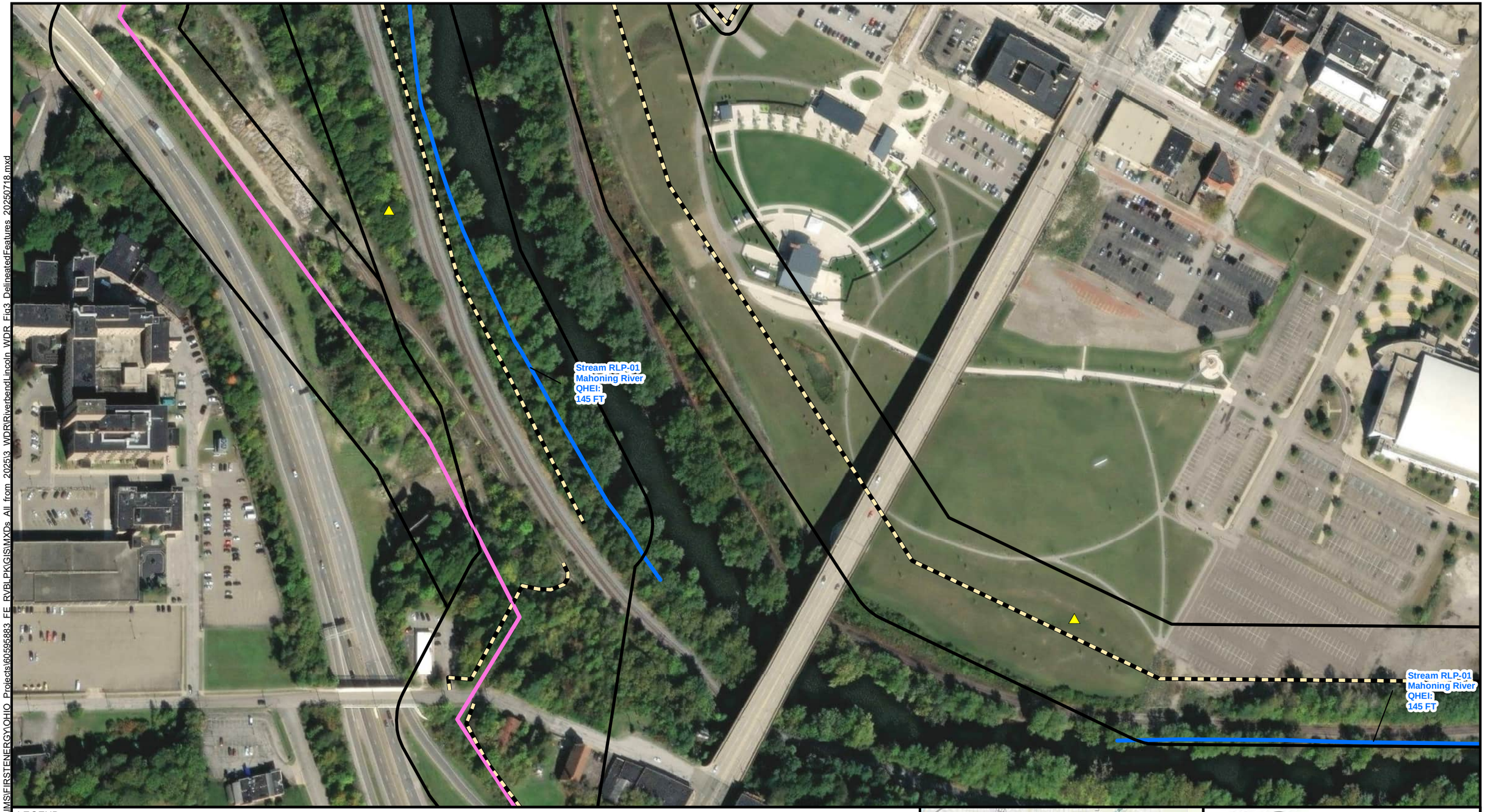
Youngstown 138kV Reinforcement Project

FIGURE 3
SHEET 2 of 22
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60595883

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LEGEND

- Existing Substation
- Upland Data Point
- Wetland Data Point
- Proposed Access Road
- Railroad

Lincoln Park-Riverbend 138 kV Transmission Line

- Alternate Route
- Common Route
- Preferred Route
- Delineated Stream (HHEI)
- Delineated Stream (QHEI)
- Delineated Wetland
- Survey Boundary
- Proposed Riverbend Substation Expansion
- County Boundary

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, Bing Maps Aerial

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Youngstown 138kV Reinforcement Project

FIGURE 3
SHEET 3 of 22
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60595883

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Stream RLP-01
Mahoning River
QHEI:
145 FT

LEGEND

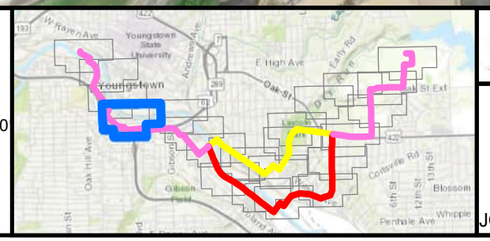
- Existing Substation
- Upland Data Point
- Wetland Data Point
- Proposed Access Road
- Railroad

Lincoln Park-Riverbend 138 kV Transmission Line

- Alternate Route
- Common Route
- Preferred Route
- Delineated Stream (HHEI)
- Delineated Stream (QHEI)
- Delineated Wetland
- Survey Boundary
- Proposed Riverbend Substation Expansion
- County Boundary

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, Bing Maps Aerial



ATSI

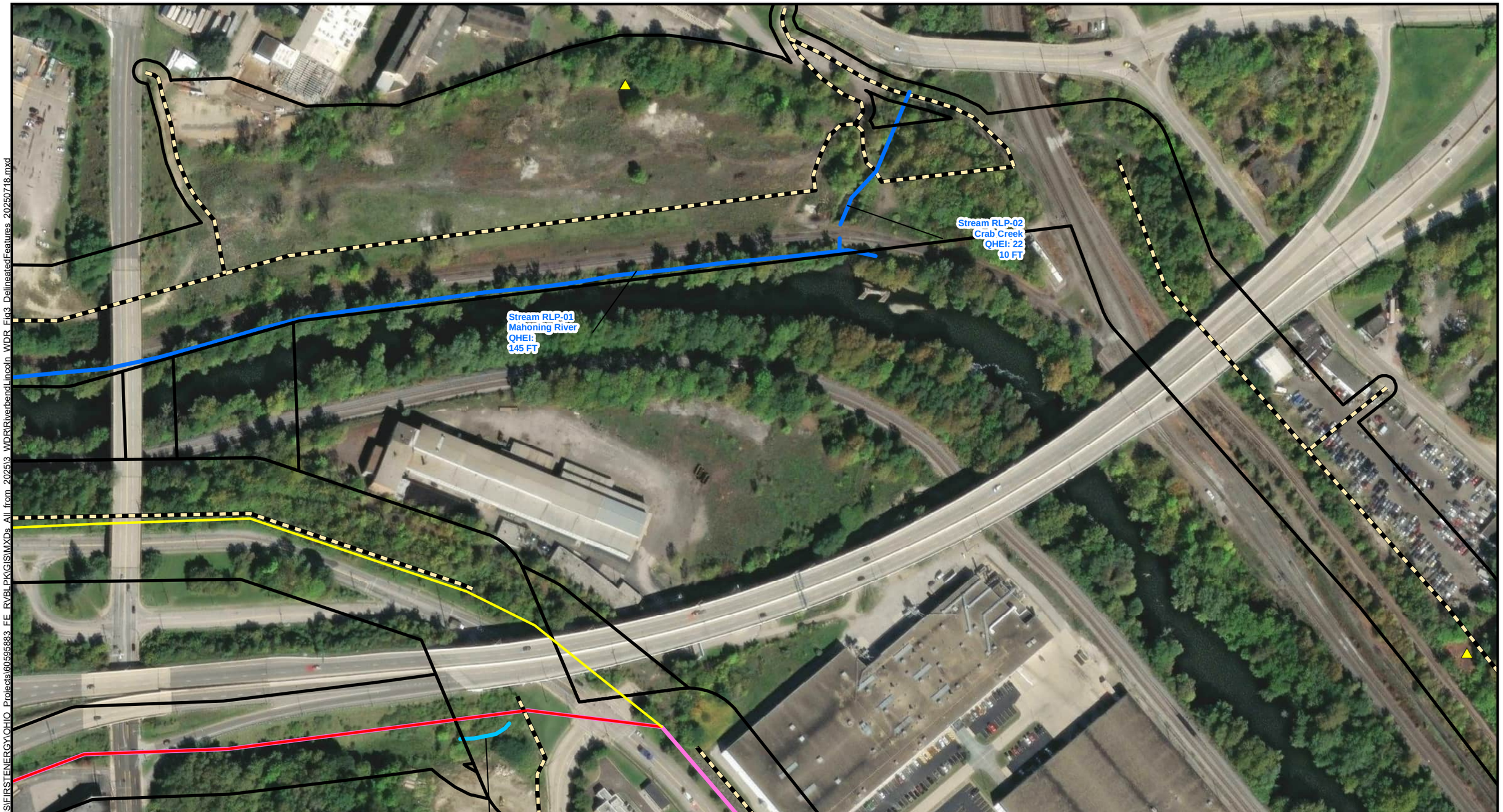
Youngstown 138kV Reinforcement Project

FIGURE 3
SHEET 4 of 22
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60595883

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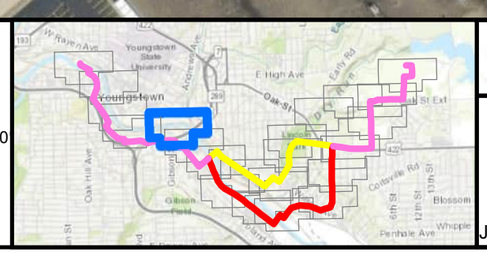
- Existing Substation
- Upland Data Point
- Wetland Data Point
- Proposed Access Road
- Railroad

Lincoln Park-Riverbend 138 kV Transmission Line

- Alternate Route
- Common Route
- Preferred Route
- Delineated Stream (HHEI)
- Delineated Stream (QHEI)
- Delineated Wetland
- Survey Boundary
- Proposed Riverbend Substation Expansion
- County Boundary

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, Bing Maps Aerial



ATSI

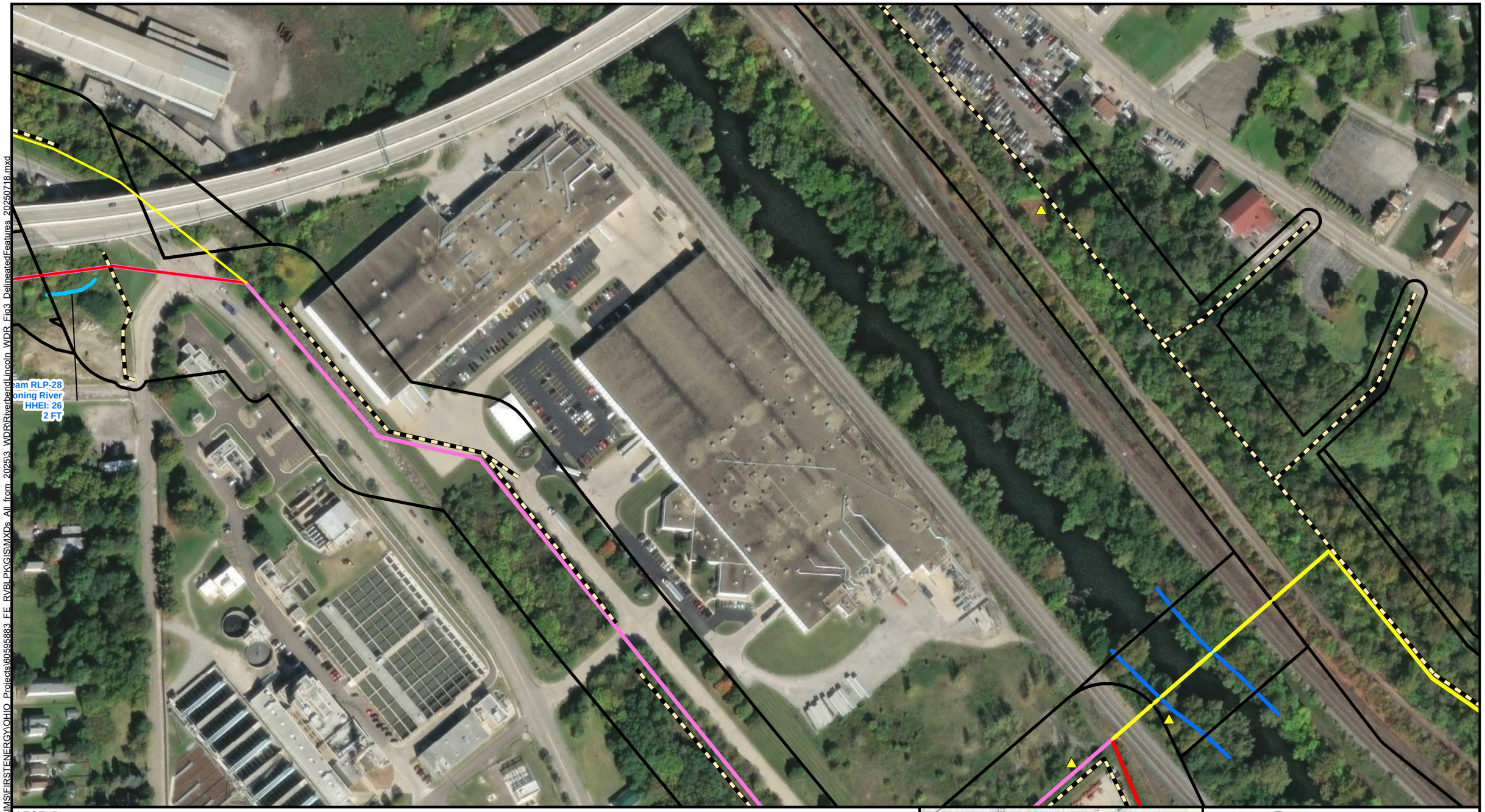
Youngstown 138kV Reinforcement Project

FIGURE 3
SHEET 5 of 22
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60595883

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LEGEND

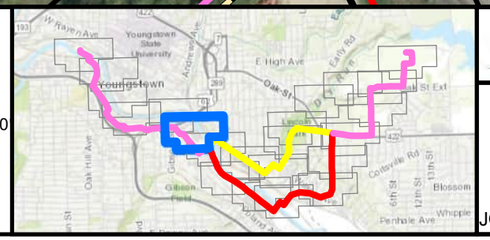
- Existing Substation
- Upland Data Point
- Wetland Data Point
- Proposed Access Road
- Railroad

Lincoln Park-Riverbend 138 kV Transmission Line

- Alternate Route
- Common Route
- Preferred Route
- Delineated Stream (HHEI)
- Delineated Stream (QHEI)
- Delineated Wetland
- Survey Boundary
- Proposed Riverbend Substation Expansion
- County Boundary

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, Bing Maps Aerial



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Youngstown 138kV Reinforcement Project

FIGURE 3
SHEET 6 of 22
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60595883

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Wetland RLP-27
PEM - Category 1

Wetland RLP-01
PEM - Category 1

Stream RLP-01
Mahoning River
QHEI:
145 FT

Stream RLP-03
UNT to Mahoning River
HHEI: 25
0.5 FT

LEGEND

- Existing Substation
- Upland Data Point
- Wetland Data Point
- Proposed Access Road
- Railroad

Lincoln Park-Riverbend 138 kV Transmission Line

- Alternate Route
- Common Route
- Preferred Route
- Delineated Stream (HHEI)
- Delineated Stream (QHEI)
- Delineated Wetland
- Survey Boundary
- Proposed Riverbend Substation Expansion
- County Boundary

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, Bing Maps Aerial

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Youngstown 138kV Reinforcement Project

FIGURE 3
SHEET 7 of 22
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60595883

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Wetland RLP-01
PEM - Category 1

Stream RLP-01
Mahoning River
QHEI:
145 FT

Stream RLP-03
UNT to Mahoning River
HHEI: 25
0.5 FT

LEGEND

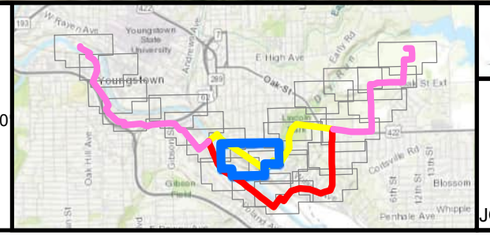
- Existing Substation
- Upland Data Point
- Wetland Data Point
- Proposed Access Road
- Railroad

Lincoln Park-Riverbend 138 kV Transmission Line

- Alternate Route
- Common Route
- Preferred Route
- Delineated Stream (HHEI)
- Delineated Stream (QHEI)
- Delineated Wetland
- Survey Boundary
- Proposed Riverbend Substation Expansion
- County Boundary

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, Bing Maps Aerial



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Youngstown 138kV Reinforcement Project

FIGURE 3
SHEET 8 of 22
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60595883

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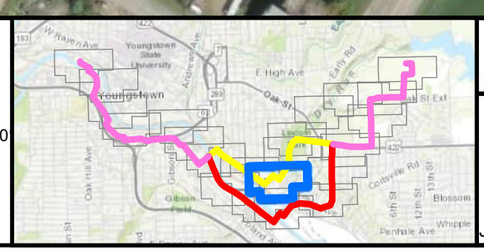
- Existing Substation
- Upland Data Point
- Wetland Data Point
- Proposed Access Road
- Railroad

Lincoln Park-Riverbend 138 kV Transmission Line

- Alternate Route
- Common Route
- Preferred Route
- Delineated Stream (HHEI)
- Delineated Stream (QHEI)
- Delineated Wetland
- Survey Boundary
- Proposed Riverbend Substation Expansion
- County Boundary

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, Bing Maps Aerial



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Youngstown 138kV Reinforcement Project

FIGURE 3
SHEET 9 of 22
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

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Stream RLP-07
UNT to Dry Run
HHEI: 25
2.4 FT

Wetland RLP-033
PEM - Category 1

Stream RLP-06
UNT to Dry Run
HHEI: 19
1 FT

Stream RLP-05
UNT to Dry Run
HHEI: 39
4 FT

Stream RLP-04
Dry Run
QHEI: 51
18 FT

LEGEND

- Existing Substation
- Upland Data Point
- Wetland Data Point
- Proposed Access Road
- Railroad

Lincoln Park-Riverbend 138 kV Transmission Line

- Alternate Route
- Common Route
- Preferred Route
- Delineated Stream (HHEI)
- Delineated Stream (QHEI)
- Delineated Wetland
- Survey Boundary
- Proposed Riverbend Substation Expansion
- County Boundary

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, Bing Maps Aerial

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Youngstown 138kV Reinforcement Project

FIGURE 3
SHEET 10 of 22
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60595883

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Stream RLP-09
UNT to Dry Run
HHEI: 23
3 FT

Stream RLP-30
UNT to Dry Run
HHEI: 14
3 FT

Stream RLP-08
UNT to Dry Run
HHEI: 22
1.5 FT

Wetland RLP-033
PEM - Category 1

Stream RLP-07
UNT to Dry Run
HHEI: 25
2.4 FT

Stream RLP-06
UNT to Dry Run
HHEI: 19
1 FT

Stream RLP-05
UNT to Dry Run

UNT to

UNT to

LEGEND

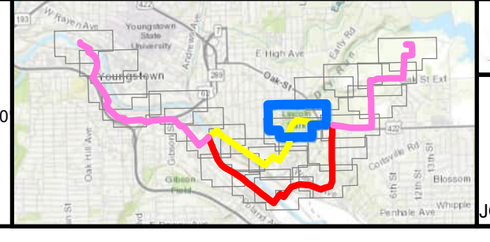
- Existing Substation
- Upland Data Point
- Wetland Data Point
- Proposed Access Road
- Railroad

Lincoln Park-Riverbend 138 kV Transmission Line

- Alternate Route
- Common Route
- Preferred Route
- Delineated Stream (HHEI)
- Delineated Stream (QHEI)
- Delineated Wetland
- Survey Boundary
- Proposed Riverbend Substation Expansion
- County Boundary

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, Bing Maps Aerial



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Youngstown 138kV Reinforcement Project

FIGURE 3
SHEET 11 of 22
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60595883

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Stream RLP-32
UNT to Dry Run
HHEI: 15
3 FT

Stream RLP-34
UNT to Dry Run
HHEI: 15
3 FT

Stream RLP-29
Dry Run
HHEI: 56
30 FT

Stream RLP-31
UNT to Dry Run
HHEI: 12
3 FT

Wetland RLP-03
PSS - Category 1

Wetland RLP-29b
PEM - Mod.
Category 2

Wetland RLP-29a
PSS - Mod.
Category 2

Wetland RLP-04
PEM - Category 1

Stream RLP-29
Dry Run
HHEI: 56
30 FT

Stream RLP-14
UNT to Dry Run
HHEI: 31
1.5 FT

Wetland RLP-30
PEM - Category 2

Wetland RLP-02
PFO - Category 2

Stream RLP-35
UNT to Dry Run
HHEI: 17
3 FT

Stream RLP-13
UNT to Dry Run
HHEI: 65
5 FT

Wetland RLP-32
PFO - Category 2

Wetland RLP-31
PEM - Category 2

Stream RLP-12
UNT to Dry Run
HHEI: 27
2 FT

Stream RLP-10
UNT to Dry Run
HHEI: 48
7 FT

Stream RLP-11
UNT to Dry Run
HHEI: 27
1.5 FT

Stream RLP-09
UNT to Dry Run
HHEI: 23
3 FT

Stream RLP-30
UNT to Dry Run
HHEI: 14
3 FT

LEGEND

- Existing Substation
- Upland Data Point
- Wetland Data Point
- Proposed Access Road
- Railroad

Lincoln Park-Riverbend 138 kV Transmission Line

- Alternate Route
- Common Route
- Preferred Route
- Delineated Stream (HHEI)
- Delineated Stream (QHEI)
- Delineated Wetland
- Survey Boundary
- Proposed Riverbend Substation Expansion
- County Boundary

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, Bing Maps Aerial

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FIGURE 3
SHEET 12 of 22
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

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Stream RLP-33
UNT to Dry Run
HHEI: 14
3 FT

Stream RLP-32
UNT to Dry Run
HHEI: 15
3 FT

Stream RLP-34
UNT to Dry Run
HHEI: 15
3 FT

Wetland RLP-03
PSS - Category 1

Wetland RLP-05
PEM - Category 1

Stream RLP-16
UNT to Dry Run
HHEI: 20 2 FT

Wetland RLP-07
PSS - Category 2

Wetland RLP-08a
PEM - Category 2

Wetland RLP-06
PSS - Category 1

Stream RLP-29
Dry Run
HHEI: 56
30 FT

Stream RLP-31
UNT to Dry Run
HHEI: 12
3 FT

Wetland RLP-04
PEM - Category 1

Stream RLP-18
UNT to Dry Run
HHEI: 26
2 FT

Wetland RLP-08b
PFO - Category 2

Stream RLP-15
UNT to Dry Run
HHEI: 47
3 FT

Wetland RLP-29a
PSS - Mod.
Category 2

Stream RLP-14
UNT to Dry Run
HHEI: 31
1.5 FT

Stream RLP-19
UNT to Dry Run
HHEI: 19
0.5 FT

Wetland RLP-29b
PEM - Mod.
Category 2

Stream RLP-35
UNT to Dry Run
HHEI: 17
3 FT

Stream RLP-13
UNT to Dry Run
HHEI: 65
5 FT

Wetland RLP-02
PFO - Category 2

LEGEND

- Existing Substation
- Upland Data Point
- Wetland Data Point
- Proposed Access Road
- Railroad

Lincoln Park-Riverbend 138 kV Transmission Line

- Alternate Route
- Common Route
- Preferred Route
- Delineated Stream (HHEI)
- Delineated Stream (QHEI)
- Delineated Wetland
- Survey Boundary
- Proposed Riverbend Substation Expansion
- County Boundary

0 200 400
Feet

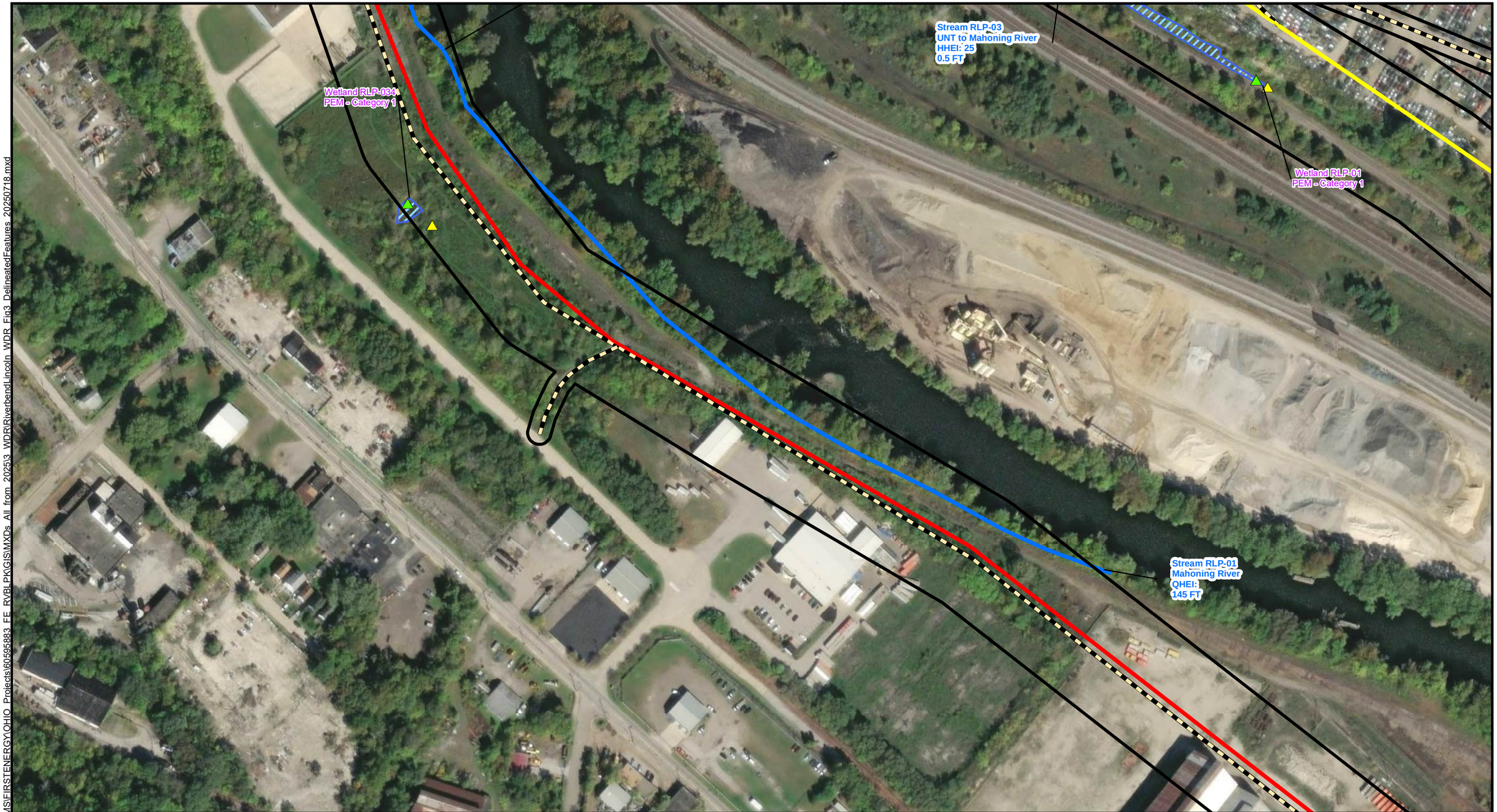
BASE MAP SOURCE:
ArcGIS Online, Bing Maps Aerial

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Youngstown 138kV Reinforcement Project

FIGURE 3
SHEET 13 of 22
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

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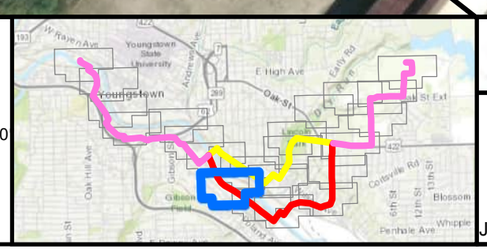
- Existing Substation
- Upland Data Point
- Wetland Data Point
- Proposed Access Road
- Railroad

Lincoln Park-Riverbend 138 kV Transmission Line

- Alternate Route
- Common Route
- Preferred Route
- Delineated Stream (HHEI)
- Delineated Stream (QHEI)
- Delineated Wetland
- Survey Boundary
- Proposed Riverbend Substation Expansion
- County Boundary

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, Bing Maps Aerial



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FIGURE 3
SHEET 14 of 22
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

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Stream RLP-01
Mahoning River
QHEI:
145 FT

Stream RLP-01
Mahoning River
QHEI:
145 FT

LEGEND

- Existing Substation
- Upland Data Point
- Wetland Data Point
- Proposed Access Road
- Railroad

Lincoln Park-Riverbend 138 kV Transmission Line

- Alternate Route
- Common Route
- Preferred Route
- Delineated Stream (HHEI)
- Delineated Stream (QHEI)
- Delineated Wetland
- Survey Boundary
- Proposed Riverbend Substation Expansion
- County Boundary

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, Bing Maps Aerial

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Youngstown 138kV Reinforcement Project

FIGURE 3
SHEET 15 of 22
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

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Stream RLP-01
Mahoning River
QHEI:
145 FT

LEGEND

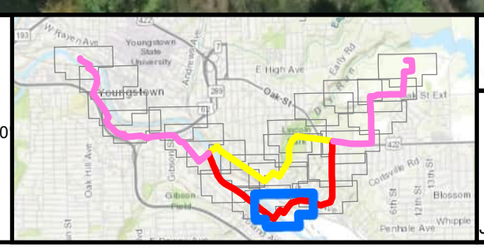
- Existing Substation
- Upland Data Point
- Wetland Data Point
- Proposed Access Road
- Railroad

Lincoln Park-Riverbend 138 kV Transmission Line

- Alternate Route
- Common Route
- Preferred Route
- Delineated Stream (HHEI)
- Delineated Stream (QHEI)
- Delineated Wetland
- Survey Boundary
- Proposed Riverbend Substation Expansion
- County Boundary

0 200 400
Feet

BASE MAP SOURCE:
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FIGURE 3
SHEET 16 of 22
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

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Stream RLP-26
UNT to Mahoning River
HHEI: 26
3 FT

Stream RLP-27
UNT to Mahoning River
HHEI: 28
3 FT

Wetland RLP-23
PEM - Category 2

Wetland RLP-24
PEM - Category 2

Wetland RLP-25
PEM - Category 1

Wetland RLP-26
PEM - Category 1

LEGEND

- Existing Substation
- Upland Data Point
- Wetland Data Point
- Proposed Access Road
- Railroad

Lincoln Park-Riverbend 138 kV Transmission Line

- Alternate Route
- Common Route
- Preferred Route
- Delineated Stream (HHEI)
- Delineated Stream (QHEI)
- Delineated Wetland
- Survey Boundary
- Proposed Riverbend Substation Expansion
- County Boundary

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, Bing Maps Aerial

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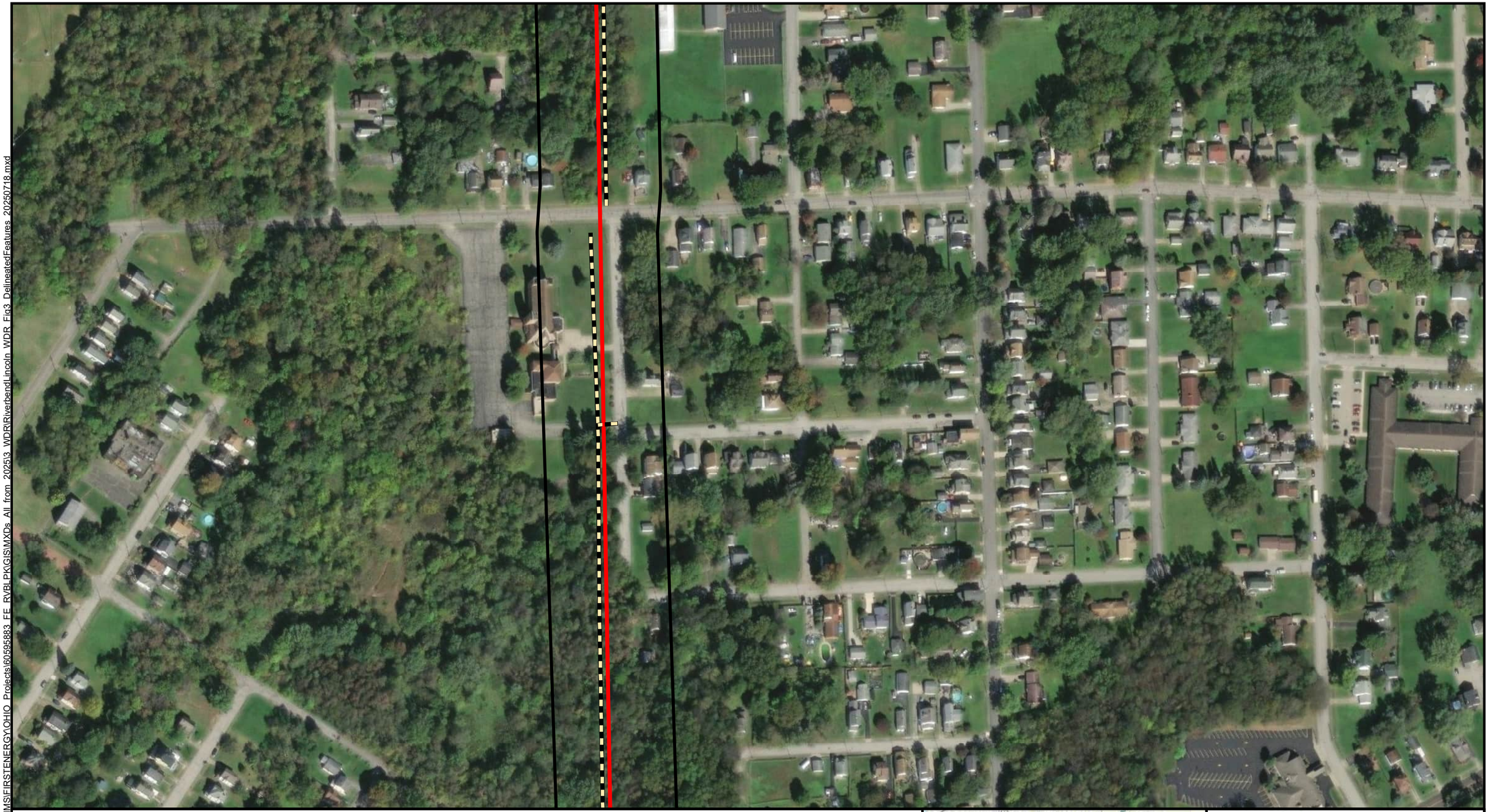
FIGURE 3
SHEET 17 of 22
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60595883

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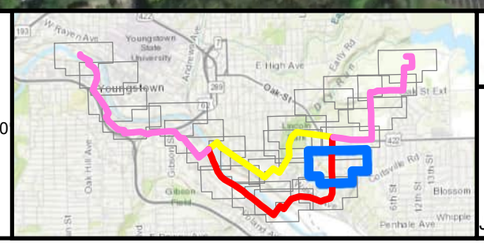
- Existing Substation
- Upland Data Point
- Wetland Data Point
- Proposed Access Road
- Railroad

Lincoln Park-Riverbend 138 kV Transmission Line

- Alternate Route
- Common Route
- Preferred Route
- Delineated Stream (HHEI)
- Delineated Stream (QHEI)
- Delineated Wetland
- Survey Boundary
- Proposed Riverbend Substation Expansion
- County Boundary

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, Bing Maps Aerial



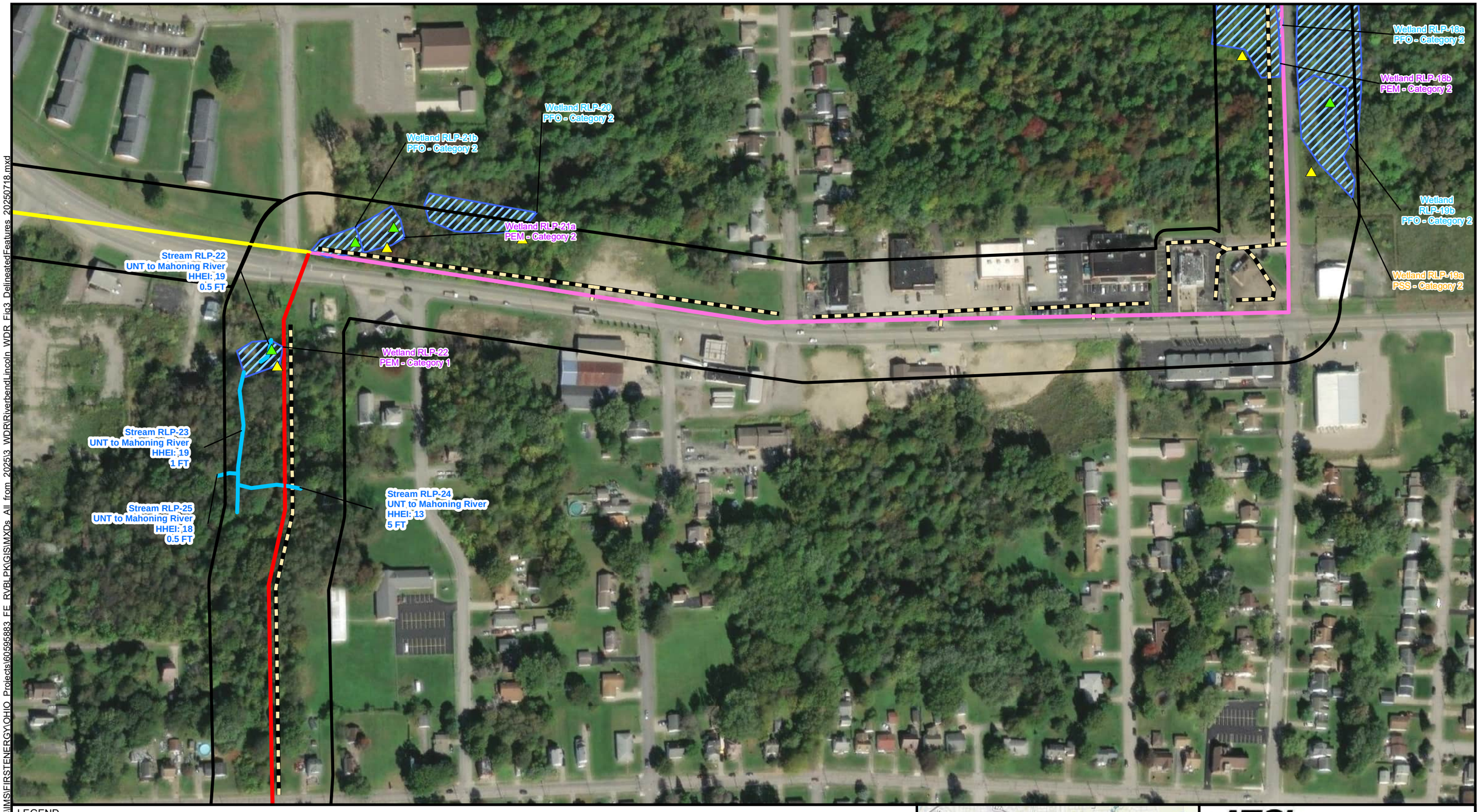
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FIGURE 3
SHEET 18 of 22
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60595883

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LEGEND

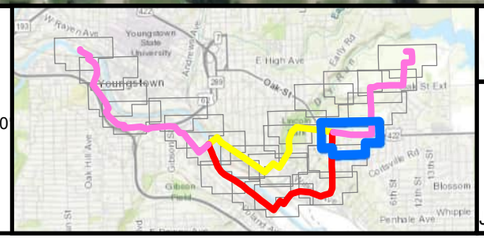
- Existing Substation
- Upland Data Point
- Wetland Data Point
- Proposed Access Road
- Railroad

Lincoln Park-Riverbend 138 kV Transmission Line

- Alternate Route
- Common Route
- Preferred Route
- Delineated Stream (HHEI)
- Delineated Stream (QHEI)
- Delineated Wetland
- Survey Boundary
- Proposed Riverbend Substation Expansion
- County Boundary

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, Bing Maps Aerial



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Youngstown 138kV Reinforcement Project

FIGURE 3
SHEET 19 of 22
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60595883

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Stream RLP-19
UNT to Dry Run
HHEI: 19
0.5 FT

Stream RLP-20
UNT to Dry Run
HHEI: 69
5 FT

Wetland RLP-18a
PFO - Category 2

Stream RLP-21
UNT to Dry Run
HHEI: 25
2 FT

Wetland RLP-18b
PEM - Category 2

Wetland RLP-19b
PFO - Category 2

LEGEND

- Existing Substation
- Upland Data Point
- Wetland Data Point
- Proposed Access Road
- Railroad

Lincoln Park-Riverbend 138 kV Transmission Line

- Alternate Route
- Common Route
- Preferred Route
- Delineated Stream (HHEI)
- Delineated Stream (QHEI)
- Delineated Wetland
- Survey Boundary
- Proposed Riverbend Substation Expansion
- County Boundary

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, Bing Maps Aerial

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FIGURE 3
SHEET 20 of 22
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

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Wetland RLP-16c
PSS - Category 2

Wetland RLP-16a
PFO - Category 2

Wetland RLP-14
PFO - Category 2

Wetland RLP-13
PSS - Category 2

Wetland RLP-12
PEM - Category 1

Wetland RLP-07
PSS - Category 2

Wetland RLP-10
PSS - Category 2

Stream RLP-16
UNT to Dry Run
HHEI: 20 2 FT

Wetland RLP-06
PSS - Category 1

Wetland RLP-09a
PSS - Category 2

Wetland RLP-11
PEM - Category 2

Wetland RLP-08a
PEM - Category 2

Wetland RLP-09b
PEM - Category 2

Wetland RLP-08b
PFO - Category 2

Stream RLP-17
UNT to Dry Run
HHEI: 49
4.1 FT

Wetland RLP-05
PEM - Category 1

Stream RLP-18
UNT to Dry Run
HHEI: 26
2 FT

Stream RLP-15
UNT to Dry Run
HHEI: 47
3 FT

Stream RLP-19
UNT to Dry Run
HHEI: 19
0.5 FT

LEGEND

- Existing Substation
- Upland Data Point
- Wetland Data Point
- Proposed Access Road
- Railroad

Lincoln Park-Riverbend 138 kV Transmission Line

- Alternate Route
- Common Route
- Preferred Route
- Delineated Stream (HHEI)
- Delineated Stream (QHEI)
- Delineated Wetland
- Survey Boundary
- Proposed Riverbend Substation Expansion
- County Boundary

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, Bing Maps Aerial

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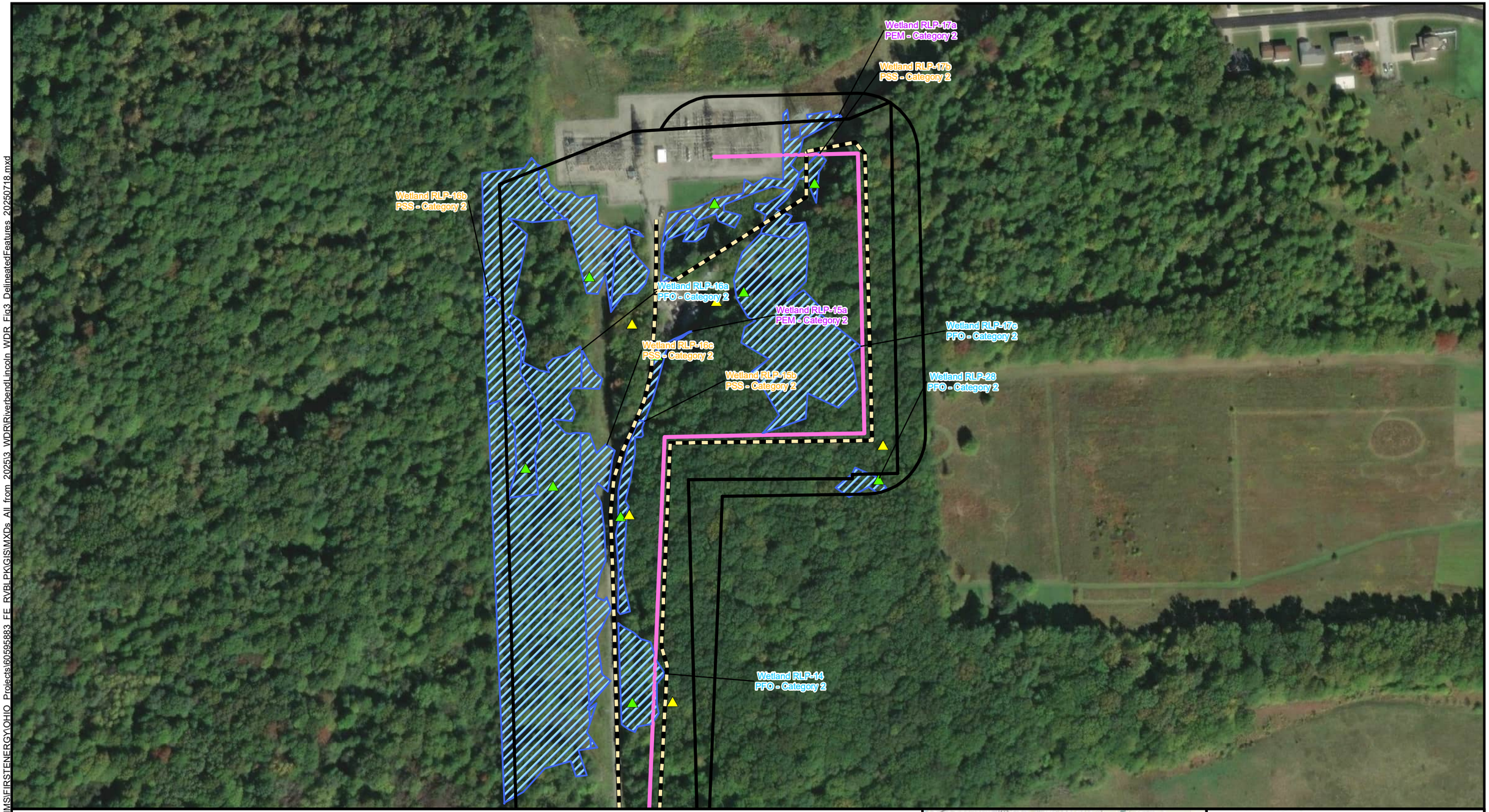
Youngstown 138kV Reinforcement Project

FIGURE 3
SHEET 21 of 22
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

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LEGEND

- Existing Substation
- Upland Data Point
- Wetland Data Point
- Proposed Access Road
- Railroad

Lincoln Park-Riverbend 138 kV Transmission Line

- Alternate Route
- Common Route
- Preferred Route
- Delineated Stream (HHEI)
- Delineated Stream (QHEI)
- Delineated Wetland
- Survey Boundary
- Proposed Riverbend Substation Expansion
- County Boundary

0 200 400
Feet

BASE MAP SOURCE:
ArcGIS Online, Bing Maps Aerial

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FIGURE 3
SHEET 22 of 22
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 60595883

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APPENDIX A

U.S. ARMY CORPS OF ENGINEERS WETLAND FORMS

Wetland RLP-01

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 08-Jan-20

Applicant/Owner: ATSI, . a FirstEnergy Company | State: OH | Sampling Point: w-aeh-20200108-01

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. T2N | R. R2W

Landform (hillslope, terrace, etc.): Footslope | Local relief (concave, convex, none): concave | Slope: 2.0 % / 0.0 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.086180 | Long.: -80.627305 | Datum: WGS 84

Soil Map Unit Name: Ua-Udorthents, loamy, 2 to 25 percent slopes | NWI classification: NA

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: (Explain alternative procedures here or in a separate report.)

PEM wetland is located along the edge of a railroad corridor and between the toe-of-slope of the adjacent hillside. The boundary of the wetland was identified by the geomorphic position of the landscape that was dominated by Typa angustifolia and Phragmites australis.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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): 1	
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:

Wetland recieves water from precipitation and runoff from surrounding areas.

Wetland RLP-01

VEGETATION - Use scientific names of plants

Sampling Point: **w-aeh-20200108-01**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft)			
1. *Platanus occidentalis*	4	☐	FACW
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	4	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. *Typha angustifolia*	70	☑	OBL
2. *Phragmites australis*	30	☑	FACW
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	70	**x 1 =**	70	
FACW species	34	**x 2 =**	68	
FAC species	0	**x 3 =**	0	
FACU species	0	**x 4 =**	0	
UPL species	0	**x 5 =**	0	
Column Totals:	104	**(A)**	138	**(B)**

Prevalence Index = B/A = 1.327

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.

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the wetland area. Photographs of the wetland habitat are located in Appendix D.

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

Sampling Point: **w-aeh-20200108-01**

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	10YR	3/2	100						Silty Clay Loam	40% fill
5-18	10YR	3/1	95	10YR	5/6	5	C	M	Silty Clay Loam	40% fill

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Redox dark surface was present within wetland area.

Based on the site investigations, AECOM identified that the wetland met all three criteria and classified this area as a wetland. The wetland is represented by a PEM component.

Wetland RLP-02

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 06-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-jbl-20200106-01

Investigator(s): JBL, JTT | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.095694 | Long.: -80.610871 | Datum: NAD 83

Soil Map Unit Name: DkF-Dekalb very stony loam, 25 to 50 percent slopes | NWI classification: NA

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, et

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: (Explain alternative procedures here or in a separate report.)

PFO Wetland at the toe of slope in a ravine. The boundary of the wetland was identified by the dominance of green ash trees and saplings, and other hydrophytic species within areas saturated with water. Two streams were delineated flowing near/adjacent to the wetland which would provide a hyrdologic connection to Dry Run. Surface flow/drainage from hh-JBL-20200106-04 directly discharges into this PFO wetland. Additional flood event provides hydrology input to this wetland area from the larger stream, hh-JBL-20200106-05.

Hydrology

Wetland Hydrology Indicators:

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

- [ ] Surface Water (A1)
- [x] High Water Table (A2)
- [x] 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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [x] 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)
- [x] Geomorphic Position (D2)
- [x] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [x] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes (●)	No ( )	Depth (inches): 8	
Saturation Present? (includes capillary fringe)	Yes (●)	No ( )	Depth (inches): 0	Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

Soils are saturated and water table is present up to the surface of the soil pit. The source of hydrology is derived from precipitation, surface flow/drainage, and flood events.

Wetland RLP-02

VEGETATION - Use scientific names of plant

Sampling Point: **w-jbl-20200106-01**

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	35	☑	FACW
2. *Quercus palustris*	5	☐	FACW
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	40	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Fraxinus pennsylvanica*	20	☑	FACW
2. *Acer saccharum*	15	☑	FACU
3. *Acer saccharinum*	5	☐	FACW
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	40	= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Epilobium coloratum*	40	☑	OBL
2. *Cyperus esculentus*	25	☑	FACW
3. *Geum canadense*	20	☐	FAC
4. *Solidago gigantea*	15	☐	FACW
5. *Lysimachia nummularia*	10	☐	FACW
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	110	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Vitis riparia*	15	☑	FAC
2.	0	☐	
3.	0	☐	
4.	0	☐	
	15	= Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	40	x 1 =	40	
FACW species	110	x 2 =	220	
FAC species	35	x 3 =	105	
FACU species	15	x 4 =	60	
UPL species	0	x 5 =	0	
Column Totals:	200	(A)	425	(B)

Prevalence Index = B/A = 2.125

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Dominant stratum obserevd to be PFO based on 40% cover. Japanese knotweed (Polygonum cuspidatum) covers an area northwest of wetland between the stream. Photographs of this wetland habitat can be found in Appendix D.

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

Soil

Sampling Point: **w-jbl-20200106-01**

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc [2]	Texture	Remarks
0-11	10YR 4/1	90	5YR 4/4	10	C	M	Clay Loam	Predominant 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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: gravel

Depth (inches): 11

Hydric Soil Present? **Yes** ◉ **No** ○

Remarks:

The soil profile indicated the presence of two hydric soil indicators that are likely attributed to the frequent saturation of the wetland. Gravel was found at 11inches deep impeding further digging.
Sample point was observed to meet the vegetation, hydrology and soils indicators to classify this area as a wetland.

Wetland RLP-03

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-jbl-20200107-02

Investigator(s): JBL, JTT | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.09684 | Long.: -80.6089 | Datum: NAD 83

Soil Map Unit Name: CmC - Chili loam, 6 to 12 percent slopes | NWI classification: N/A

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

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

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

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

Hydrophytic Vegetation Present?	Yes (●) No ( )	Is the Sampled Area within a Wetland? Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks: (Explain alternative procedures here or in a separate report.)

PSS wetland. Path has been bushhogged through the wetland area. Former earthwork to west appears to have impounded surface runoff. Extends offsite to the north towards a swale/stream which will have a hydrologic connection to Dry Run. Boundary determined in parts via topography, dark/wet soils, and presence of wetland vegetation (mainly Epilobium and Cornus spp.)

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( ) No (●)	Depth (inches):	
Water Table Present?	Yes (●) No ( )	Depth (inches):	4
Saturation Present? (includes capillary fringe)	Yes (●) No ( )	Depth (inches):	0

Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

Primary and secondary hydrology indicators present. Precipitation is source of hydrology. The soil is very saturated at surface. Recent precipitation = about 3 days ago.

VEGETATION - Use scientific names of plants

Sampling Point: **w-jbl-20200107-02**

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	5	☑	FACW
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	5	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. *Cornus alba*	35	☑	FACW
2. *Rhamnus cathartica*	30	☑	FAC
3. *Rosa setigera*	10	☐	FACU
4. *Cornus obliqua*	10	☐	FACW
5.	0	☐	
6.	0	☐	
7.	0	☐	
	85	= Total Cover	

Herb Stratum (Plot size: 5')			
1. *Epilobium coloratum*	20	☑	OBL
2. *Phalaris arundinacea*	15	☑	FACW
3. *Symphyotrichum lateriflorum*	15	☑	FAC
4. *Juncus effusus*	10	☐	OBL
5. *Typha angustifolia*	10	☐	OBL
6. *Poa pratensis*	10	☐	FACU
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	80	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= 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	40	x 1 =	40	
FACW species	65	x 2 =	130	
FAC species	45	x 3 =	135	
FACU species	20	x 4 =	80	
UPL species	0	x 5 =	0	
Column Totals:	170	(A)	385	(B)

Prevalence Index = B/A = 2.265

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.

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Hydrophytic vegetation indicators present. PSS with mixed vegetation including common buckthorn and dogwood. Climbing rose presenting in shrub growth form, not climbing vine. Photos of wetland data point can be found in Appendix D.

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

Soil

Sampling Point: **w-jbl-20200107-02**

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
0-5	10YR	4/2	95	10YR	4/6	5	C	M	Clay Loam	
5-16	10YR	4/2	75	10YR	4/6	15	C	M	Clay Loam	
				7.5YR	4/4	10	C	M	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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☑ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Soil profile indicated the presence of hydric soil indicators that are likely due to the frequency of saturation from precipitation.

Based on site investigations this wetland meets the three wetland criteria and is classified as a wetland. The wetland is comprised of predominantly shrub/sapling vegetation over an herbaceous layer with indeterminant hydrological connectivity to a swale/stream north of the survey area. The wetland boundary extends to the north beyond the survey area as shown on Figure 3.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-jbl-20200107-01

Investigator(s): JBL, JTT | Section, Township, Range: S. | T. 2N | R. 1W

Landform (hillslope, terrace, etc.): Swale | Local relief (concave, convex, none): concave | Slope: 1.0 % / 0.0 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.09692 | Long.: -80.607 | Datum: NAD 83

Soil Map Unit Name: BtB - Bogart loam, till substratum, 2 to 6 percent slopes | NWI classification: N/A

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

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

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

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

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	Is the Sampled Area within a Wetland? Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland is a PEM swale which is outfall from constructed farm pond. Wetland swale drains NW to roadside ditch which was delineated as hh-jbl-20200106-06. Wetland boundary was identified by concave topography, saturated vegetation in the middle of an upland field. The wetland boundary continues to the southeast outside of the survey area. Wetland is hydrologically connected to downstream stream feature via short upland drainage swale. Wetland subject to regular mowing activities (atypical), though vegetation growth was sufficient to allow for identification.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☑ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes (●)	No ( )	Depth (inches): 8	
Saturation Present? (includes capillary fringe)	Yes (●)	No ( )	Depth (inches): 0	Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

Primary and secondary hydrology indicators present. Precipitation and overflow from pond to the southeast are sources of hydrology. The soil is very saturated at surface. Recent precipitation = about 3 days ago.

VEGETATION - Use scientific names of plants

Sampling Point: **w-jbl-20200107-01**

Tree Stratum (Plot size: 10')	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	

Sapling/Shrub Stratum (Plot size: 10')			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	

Herb Stratum (Plot size: 10')			
1. *Poa palustris*	100	☑	FACW
2.		☐	
3.		☐	
4.		☐	
5.		☐	
6.		☐	
7.		☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	100	= Total Cover	

Woody Vine Stratum (Plot size: 10')			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	100	x 2 =	200	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	100	(A)	200	(B)

Prevalence Index = B/A = 2.000

Hydrophytic Vegetation Indicators:

- ☑ Rapid Test for Hydrophytic Vegetation
- ☑ Dominance Test is > 50%
- ☑ Prevalence Index is ≤3.0 [1]
- ☐ Morphological Adaptations [1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation [1] (Explain)

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

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Plot confined to approx 10ft wide swale, restricted to herbaceous vegetation. Wetland located in residential yard and has been regularly mowed (atypical), though existing vegetation growth and remnant material was sufficient to provide identification. Photos of wetland data point can be found in Appendix D.

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

Soil

Sampling Point: **w-jbl-20200107-01**

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
0-7	7.5YR 4/1	95	5YR 4/4	5	C	M	Clay Loam	
7-16	7.5YR 4/1	85	5YR 4/4	15	C	M	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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☑ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Soil profile indicated the presence of hydric soil indicators that are likely attributed to the frequency of saturation.

Based on site investigations this wetland meets the three wetland criteria and is classified as a wetland. The wetland is comprised of herbaceous vegetation and is indirectly hydrologically connected to a stream feature (roadside ditch) flowing to the southwest. The wetland boundary extends to the southeast beyond the survey area as shown on Figure 3.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-jbl-20200107-03

Investigator(s): JBL,JTT | Section, Township, Range: S. | T. 2N | R. 1W

Landform (hillslope, terrace, etc.): Lowland | Local relief (concave, convex, none): concave | Slope: 1.0 % / 0.0 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.09781 | Long.: -80.60471 | Datum: NAD 83

Soil Map Unit Name: CmC - Chili loam, 6 to 12 percent slopes | NWI classification: R4SBC

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

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

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

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

Hydrophytic Vegetation Present?	Yes (●) No ( )	Is the Sampled Area within a Wetland? Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks: (Explain alternative procedures here or in a separate report.)

PEM lowland of wetland w-jbl-20200107-03 which flows into stream hh-jbl-20200107-01. Stream flows to southeast into culvert under Oak St Ext. Wetland boundary extends to north outside of survey area. Wetland boundary determined by following topography where saturdated soils, presence of typha/leersia were confined to the lowland area and wetland conditions did not extend up the adjacent hillsides.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☑ 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):	2
Saturation Present? (includes capillary fringe)	Yes (●) No ( )	Depth (inches):	0

Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

Primary and secondary hydrology indicators present. Secondary source information indicates wetland may receive hydrology from additional surface waters outside of survey area (NHD stream and NWI wetland mapped up-slope). Wetland drains to stream hh-jbl-20200107-01 to the south.

VEGETATION - Use scientific names of plants

Sampling Point: **w-jbl-20200107-03**

Tree Stratum (Plot size: 20')	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Typha angustifolia*	25	☑	OBL
2. *Leersia oryzoides*	35	☑	OBL
3. *Agrimonia parviflora*	25	☑	FAC
4. *Onoclea sensibilis*	20	☐	FACW
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	105	= Total Cover	
Woody Vine Stratum (Plot size: 20')			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	60	x 1 =	60
FACW species	20	x 2 =	40
FAC species	25	x 3 =	75
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	105 (A)		175 (B)

Prevalence Index = B/A = 1.667

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.

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Tree and woody vine strata plots confined to valley bottom and not adjacent hillsides. Hydrophytic vegetation indicators present. Photos of wetland data point can be found in Appendix D.

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

Soil

Sampling Point: **w-jbl-20200107-03**

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
0-16	2.5Y	5/1	80	7.5YR	4/4	20	C	M	Silty 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☑ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 soils indicator present as a depleted matrix with high value and low chroma with prominent redox features, and evidence of ponding in low-lying area. Redox features present primarily in matrix with small amounts in pore linings.

Based on site investigations this wetland meets the three wetland criteria and is classified as a wetland. The wetland is PEM within the survey area and is directly hydrologically connected to a stream feature flowing to the south. The boundary of the wetland continues to the north outside of the survey area as shown on Figure 3.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-jbl-20200107-04

Investigator(s): JBL,JTT | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.09779 | Long.: -80.60393 | Datum: NAD 83

Soil Map Unit Name: CmC - Chili loam, 6 to 12 percent slopes | NWI classification: N/A

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

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

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

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

Hydrophytic Vegetation Present?	Yes (●) No ( )	Is the Sampled Area within a Wetland? Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks: (Explain alternative procedures here or in a separate report.)

PSS wetland w-jbl-20200107-04 fed by stream hh-jbl-20200107-02 in thick, low lying scrub shrub area. Wetland was fully delineated within the survey area. Wetland boundary determined in parts via topography, dark/wet soils, and presence of wetland vegetation(mainly Epilobium spp.) and absence of rubus/rosa spp. In adjcent upland area. Wetland drains to a culvert which extends underneath Oak Street Ext and discharges into hh-JBL-20200107-01.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☑ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( ) No (●)	Depth (inches):	
Water Table Present?	Yes (●) No ( )	Depth (inches):	4
Saturation Present? (includes capillary fringe)	Yes (●) No ( )	Depth (inches):	0

Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

Primary and secondary hydrology indicators present. Wetland receives hydrology from stream hh-jbl-20200107-02 and wetland w-jbl-20200107-05 upstream. Wetland drains to culvert under Oak St Ext to the southwest then to stream hh-jbl-20200107-01 flowing to the south.

VEGETATION - Use scientific names of plants

Sampling Point: **w-jbl-20200107-04**

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix nigra*	10	☑	OBL
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Rhamnus cathartica*	30	☑	FAC
2. *Fraxinus pennsylvanica*	35	☑	FACW
3. *Rosa multiflora*	30	☑	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	95	= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Epilobium coloratum*	25	☑	OBL
2. *Solidago gigantea*	30	☑	FACW
3. *Carex vulpinoidea*	15	☐	OBL
4. *Symphyotrichum lateriflorum*	15	☐	FAC
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	85	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Lonicera japonica*	15	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
	15	= Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 71.4% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	50	x 1 =	50	
FACW species	65	x 2 =	130	
FAC species	45	x 3 =	135	
FACU species	45	x 4 =	180	
UPL species	0	x 5 =	0	
Column Totals:	205	(A)	495	(B)

Prevalence Index = B/A = 2.415

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.

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Hydrophytic vegetation indicators present. Photos of wetland data point can be found in Appendix D.

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

Soil

Sampling Point: **w-jbl-20200107-04**

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
0-16	10YR	4/2	97	7.5YR	4/6	3	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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 soils indicator present as a depleted matrix with high value and low chroma with redox features. Wetland is not within a closed depression, no evidence of ponding was observed.

Based on site investigations this wetland meets the three wetland criteria and is classified as a wetland. The wetland is dominated by shrub/sapling vegetation and is directly hydrologically connected to a stream feature flowing to the south. The wetland boundary was fully delineated within the survey area as shown on Figure 3.

Wetland RLP-07

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-jbl-20200107-05

Investigator(s): JBL, JTT | Section, Township, Range: S. | T. 2N | R. 1W

Landform (hillslope, terrace, etc.): Hillside | Local relief (concave, convex, none): concave | Slope: 1.0 % / 0.0 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.09791 | Long.: -80.60283 | Datum: NAD 83

Soil Map Unit Name: BtB - Bogart loam, till substratum, 2 to 6 percent slopes | NWI classification: N/A

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

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

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

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

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	Is the Sampled Area within a Wetland? Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks: (Explain alternative procedures here or in a separate report.)

PSS wetland in overgrown shrubby area on slight hillside. The boundary of the wetland continues to the north outside of the survey area. The wetland drains to stream hh-jbl-20200107-02 to the southwest to wetland w-jbl-20200107-04. Boundary of wetland largely determined in parts via dark/wet soils, and presence of hyrdophytic vegetation.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes (●)	No ( )	Depth (inches): 0	
Saturation Present? (includes capillary fringe)	Yes (●)	No ( )	Depth (inches): 0	Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

Hydrology indicators present. Precipitation is source of hydrology. The slight slope of the land allows the water to flow to the west. Hardly any water shown at the surface though the ground is sloshy. Water table reaches the surface and the soil is very saturated. Recent precipitation = about 3 days ago.

VEGETATION - Use scientific names of plants

Sampling Point: **w-jbl-20200107-05**

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Frangula alnus*	50	☑	FAC
2. *Cornus amomum*	30	☑	FACW
3. *Rosa multiflora*	15	☐	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	95	= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Onoclea sensibilis*	20	☑	FACW
2. *Juncus effusus*	10	☑	OBL
3. *Typha angustifolia*	5	☐	OBL
4. *Epilobium coloratum*	5	☐	OBL
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	20	x 1 =	20	
FACW species	50	x 2 =	100	
FAC species	50	x 3 =	150	
FACU species	15	x 4 =	60	
UPL species	0	x 5 =	0	
Column Totals:	135	(A)	330	(B)

Prevalence Index = B/A = 2.444

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.

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Hydrophytic vegetation indicators present. PSS with mixed vegetation including european buckthorn and dogwood. Photos of wetland data point can be found in Appendix D.

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

Soil

Sampling Point: **w-jbl-20200107-05**

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc [2]	Texture	Remarks
0-16	10YR 4/2	98	10YR 5/6	2	C	PL	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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 depleted soils with 2% redox in pore linings, soils saturated at surface. Wetland is not within a closed depression, no evidence of ponding was observed.

Based on site investigations this wetland meets the three wetland criteria and is classified as a wetland. The wetland is dominated by shrub/sapling vegetation and is directly hydrologically connected to a stream feature flowing to the southwest. The wetland boundary extends to the north beyond the survey area as shown on Figure 3.

Wetland RLP-08a

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-jbl-20200107-06a

Investigator(s): JTT, JBL | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR R | Lat.: 41.097318 | Long.: -80.601879 | Datum: NAD83

Soil Map Unit Name: FhB-Fitchville silt loam, till substratum, 2 to 6 percent slopes | NWI classification: N/A

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

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

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

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

Hydrophytic Vegetation Present?	Yes (●) No ( )	Is the Sampled Area within a Wetland? Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks: (Explain alternative procedures here or in a separate report.)

PEM section of a PEM/PFO wetland located south side of Oak Street Extenion across from yellow house. Sample point w-jbl-20200107-06b identifies the PFO portion of the wetland complex located adjcent to the east. Boundary of the wetland was determined in part by topography, pesence of saturdated soils and the presence of hydrophytic emergent vegetation. Wetland complex extends to the south of the survey corridor to have a hydrologic connecttion to hh-AEH-20200107-07.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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):	8
Water Table Present?	Yes (●) No ( )	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes (●) No ( )	Depth (inches):	16

Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

Hydrology primarily from precipitation. Standing water present. Wetland complex may receive some hydrology from roadside dtich along Oak Street Extension. Wetland complex extends south of the survey corridor.

Wetland RLP-08a

VEGETATION - Use scientific names of plant

Sampling Point: **w-jbl-20200107-06a**

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix nigra*	2	☐	OBL
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	2	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	

Herb Stratum (Plot size: 5')			
1. *Muhlenbergia frondosa*	40	☑	FACW
2. *Poa pratensis*	25	☑	FACU
3. *Typha angustifolia*	25	☑	OBL
4. *Epilobium coloratum*	15	☐	OBL
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	105	= Total Cover	

Woody Vine Stratum (Plot size: 15')		
1.	0	☐
2.	0	☐
3.	0	☐
4.	0	☐
	0	= Total Cover

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	37	**x 1 =**	37	
FACW species	40	**x 2 =**	80	
FAC species	0	**x 3 =**	0	
FACU species	35	**x 4 =**	140	
UPL species	0	**x 5 =**	0	
Column Totals:	112	**(A)**	257	**(B)**

Prevalence Index = B/A = 2.295

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Vegetation meets the Dominance test and the Prevalence Index. Photos of this resource can be found in Appendix D.

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

Wetland RLP-08a

Soil

Sampling Point: **w-jbl-20200107-06a**

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
0-16	10YR	4/2	98	10YR	5/6	2	C	PL	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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

soils uniform throughout. Soil profile indicated the presence of hydric soil indicators that are likely due to the frequency of saturation from precipitation.

Based on site investigations this wetland meets the three wetland criteria and is classified as a wetland. The wetland is comprised of predominantly PEM vegetation with and adjcent PFO dominanted wetland area located to the south/east. Wetland complex has hydrological connectivity to a stream south of the survey area. The wetland boundary extends to the south beyond the survey area as shown on Figure 3.

Wetland RLP-08b

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-jbl-20200107-06b

Investigator(s): JTT, JBL | Section, Township, Range: S. | T. 2N | R. 1W

Landform (hillslope, terrace, etc.): Flat | Local relief (concave, convex, none): none | Slope: 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR R | Lat.: 41.097367 | Long.: -80.601776 | Datum: NAD83

Soil Map Unit Name: FhB-Fitchville silt loam, till substratum, 2 to 6 percent slopes | NWI classification: N/A

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

Are Vegetation [ ], Soil [ ], or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

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

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

Hydrophytic Vegetation Present?	Yes (●) No ( )	Is the Sampled Area within a Wetland? Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks: (Explain alternative procedures here or in a separate report.)

This form represents the PFO section of a PEM/PFO wetland located south side of Oak Street Extenion across from yellow house. Sample point w-jbl-20200107-06a identifies the PEM portion of the wetland complex located adjcent to the west. Boundary of the wetland was determined in part by topography, pesence of saturdated soils and the dominant forested hydrophytic vegetation. Wetland complex extends to the south of the survey corridor to have a hydrologic connecttion to hh-AEH-20200107-07.

Hydrology

Wetland Hydrology Indicators:

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

- [ ] Surface Water (A1)
- [x] High Water Table (A2)
- [x] 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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [x] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [ ] 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)
- [x] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [x] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( ) No (●)	Depth (inches):	
Water Table Present?	Yes (●) No ( )	Depth (inches):	6
Saturation Present? (includes capillary fringe)	Yes (●) No ( )	Depth (inches):	1

Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

Hydrology primarily from precipitation. Wetland complex may receive some hydrology from roadside dtich along Oak Street Extension. Wetland extends south of the survey corridor.

Wetland RLP-08b

VEGETATION - Use scientific names of plant

Sampling Point: **w-jbl-20200107-06b**

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum*	30	☑	FACW
2. *Quercus palustris*	20	☑	FACW
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Rosa multiflora*	20	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	20	= Total Cover	
Herb Stratum (Plot size: 5')			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	0	= Total Cover	
Woody Vine Stratum (Plot size: 15')			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	50	x 2 =	100	
FAC species	0	x 3 =	0	
FACU species	20	x 4 =	80	
UPL species	0	x 5 =	0	
Column Totals:	70	(A)	180	(B)

Prevalence Index = B/A = 2.571

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in 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.

Wetland RLP-08b
Soil

Sampling Point: **w-jbl-20200107-06b**

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
0-10	10YR	4/2	98	10YR	5/6	2	C	M	Clay Loam	
10-16	10YR	5/2	90	10YR	6/8	10	C	M	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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Soil profile indicated the presence of hydric soil indicator (depleted matrix) that are likely due to the frequency of saturation from precipitation.

Based on site investigations this wetland meets the three wetland criteria and is classified as a wetland. The wetland is comprised of predominantly PFO vegetation with and adjcent PEM dominanted wetland area located to the west. Wetland complex has hydrological connectivity to a stream south of the survey area. The wetland boundary extends to the south beyond the survey area as shown on Figure 3.

Wetland RLP-09a

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 08-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-bl-20200108-02a

Investigator(s): B Leopold, R Massa | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.09771 | Long.: -80.59951 | Datum: NAD83

Soil Map Unit Name: FhB - Fitchville silt loam, till substratum, 2 to 6 percent slopes | NWI classification: n/a

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

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

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

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

Hydrophytic Vegetation Present?	Yes (●) No ( )	Is the Sampled Area within a Wetland? Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland w-bl-20200108-02a is a PSS component of a wetland complex that includes a PEM component (w-bl-20200108-02b) in a non-maintained roadside ditch along the north side of Oak Street Extenstion and adjoining low area. Past fill activity has filled in a portion of the roadside ditch, allowing surface runoff to accumulate and persist within the roadside ditch and overflowing to the adjacent PSS area. Lack of maintenance has led to scrub-shrub growth within and along the ditch edge. Evidence of hydrology and absence of facultative upland herbaceous vegetation were utilized to determine the wetland boundary. This wetland receives hydrology from precipitation, both across the flat landscape to the north and roadway runoff, and is hydrologically connected to a roadside ditch to the east, flowing east to intermittent stream s-bl-20200108-01.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☑ 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):	1
Water Table Present?	Yes (●) No ( )	Depth (inches):	7
Saturation Present? (includes capillary fringe)	Yes (●) No ( )	Depth (inches):	6

Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

This wetland includes a non-maintained roadside ditch retaining precipitation and providing the primary and secondary hydrology indicators observed.

Wetland RLP-09a

VEGETATION - Use scientific names of plant

Sampling Point: **w-bl-20200108-02a**

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Crataegus crus-galli*	20	☑	FAC
2. *Rhamnus cathartica*	5	☑	FAC
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	25	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Rhamnus cathartica*	25	☑	FAC
2. *Viburnum lentago*	10	☑	FAC
3. *Cornus alba*	10	☑	FACW
4. *Rosa multiflora*	5	☐	FACU
5. *Betula alleghaniensis*	10	☑	FAC
6.	0	☐	
7.	0	☐	
	60	= Total Cover	
Herb Stratum (Plot size: 5' r)			
1. *Scirpus atrovirens*	10	☑	OBL
2. *Phalaris arundinacea*	5	☐	FACW
3. *Epilobium coloratum*	5	☐	OBL
4. *Dichanthelium dichotomum*	15	☑	FAC
5. *Symphyotrichum pilosum*	5	☐	FACU
6. *Solidago canadensis*	5	☐	FACU
7. *Lysimachia nummularia*	10	☑	FACW
8. *Geum canadense*	5	☐	FAC
9. *Lonicera japonica*	10	☑	FACU
10.	0	☐	
11.	0	☐	
12.	0	☐	
	70	= Total Cover	
Woody Vine Stratum (Plot size: 30'r)			
1. *Lonicera japonica*	5	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
	5	= 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: 11 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 81.8% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	15	x 1 =	15	
FACW species	25	x 2 =	50	
FAC species	90	x 3 =	270	
FACU species	30	x 4 =	120	
UPL species	0	x 5 =	0	
Column Totals:	160	(A)	455	(B)

Prevalence Index = B/A = 2.844

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Photos included in Appendix D.

Hydrophytic vegetation indicators present. Data point taken off side of roadside ditch where all strata included vegetation found within the ditch portion of the wetland. Emergent/herbaceous growth not present as a distinctively different wetland component.

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

Sampling Point: **w-bl-20200108-02a**

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
0-9	10YR	4/2	95	10YR	4/6	5	C	PL	Sandy Clay Loam	
9-16	2.5y	5/3	80	2.5Y	4/4	20	C	M	Silty 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☑ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 having redox features within matrix of low chroma and higher value in upper layer of soil profile, consistent with hydrological characteristics observed. Wetland is within a depression area (roadside ditch).

Based on site investigations this wetland meets the three criteria and is identified as a wetland comprised of PSS vegetation. This wetland was fully delineated and is hydrologically connected to intermittent stream s-bl-20200108-01 to the east via overflow to a roadside ditch (non-wetland, non-stream feature), as shown on Figure 3.

Wetland RLP-09b

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 09-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-bl-20200108-02b

Investigator(s): B Leopold, R Massa | Section, Township, Range: S. | T. 2N | R. 1W

Landform (hillslope, terrace, etc.): Mound | Local relief (concave, convex, none): concave | Slope: 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.09767 | Long.: -80.59973 | Datum: NAD83

Soil Map Unit Name: BtB - Bogart loam, till substratum, 2 to 6 percent slopes | NWI classification: n/a

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

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

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

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

Hydrophytic Vegetation Present?	Yes (●) No ( )	Is the Sampled Area within a Wetland? Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks: (Explain alternative procedures here or in a separate report.)

PEM portion of wetland w-bl-20200108-02 originates within a roadside ditch located north of Oak Street Extension and extends into a scrub/shrub component (2-bl-20200108-02a) to the north. The boundary of the PEM component of this wetland was identified by the presence of Phalaris arundinacea and a concave surface. Past fill activity has filled in a portion of the roadside ditch, allowing surface runoff to accumulate and persist within the roadside ditch and overflowing to the adjacent PSS area. This wetland receives hydrology from precipitation, both across the flat landscape to the north and roadway runoff, and is hydrologically connected to a roadside ditch to the east, flowing east to intermittent stream s-bl-20200108-01.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( ) No (●)	Depth (inches):	
Water Table Present?	Yes (●) No ( )	Depth (inches):	4
Saturation Present? (includes capillary fringe)	Yes (●) No ( )	Depth (inches):	0

Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

This wetland includes a non-maintained roadside ditch retaining precipitation and providing the primary and secondary hydrology indicators observed.

Wetland RLP-09b

VEGETATION - Use scientific names of plant

Sampling Point: **w-bl-20200108-02b**

Tree Stratum (Plot size: 10'x40')	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10'x20')			
1. *Rosa multiflora*	10	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	10	= Total Cover	
Herb Stratum (Plot size: 5' r)			
1. *Phalaris arundinacea*	50	☑	FACW
2. *Epilobium anagallidifolium*	5	☐	FACW
3. *Scirpus atrovirens*	15	☐	OBL
4. *Euthamia graminifolia*	5	☐	FAC
5. *Solidago canadensis*	15	☐	FACU
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	90	= Total Cover	
Woody Vine Stratum (Plot size: 10'x40')			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	15	x 1 =	15	
FACW species	55	x 2 =	110	
FAC species	5	x 3 =	15	
FACU species	25	x 4 =	100	
UPL species	0	x 5 =	0	
Column Totals:	100	(A)	240	(B)

Prevalence Index = B/A = 2.400

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Photos included in Appendix D.

Hydrophytic vegetation indicator present as Prevalence Index is less than 3. Vegetation was disurbed by seasonal (winter) conditions, though remnant plant materials allowed for positive identification of the species observed within the emergent area. Strata plot sizes adjusted to meet narrow parameters of PEM wetland component.

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

Wetland RLP-09b

Soil

Sampling Point: **w-bl-20200108-02b**

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
0-16	10YR	4/2	95	10YR	5/6	5	C	M	Silty 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 having redox features within matrix of low chroma and higher value in upper layer of soil profile, consistent with hydrological characteristics observed. Wetland is within a depression area (roadside ditch) though no redox concentrations evident in pore linings.

Based on site investigations this wetland meets the three criteria and is identified as a wetland comprised of PEM vegetation as part of a larger PEM/SS wetland complex. This wetland was fully delineated and is hydrologically connected to intermittent stream s-bl-20200108-01 to the east via overflow to a roadside ditch (non-wetland, non-stream feature), as shown on Figure 3.

Wetland RLP-10

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 08-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-bl-20200108-01

Investigator(s): B Leopold, R Massa | Section, Township, Range: S. | T. 2N | R. 1W

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): concave | Slope: 2.0 % / 1.1 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.09781 | Long.: -80.59834 | Datum: NAD83

Soil Map Unit Name: Se - Sebring silt loam, till substratum, 0 to 2 percent slopes | NWI classification: n/a

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

Are Vegetation [ ], Soil [ ], or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes ( ) No (●)

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

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

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: (Explain alternative procedures here or in a separate report.)

Wetland w-bl-20200108-01 is a PSS wetland occurring the terrace and adjacent hillslope on (primarily) the left descending bank of intermittent stream s-bl-20200108-01. Wetland boundary determined in parts via topography (toe of slope), dark/wet soils, hydrology indicators (hummocks) and occurrence of Populus tremuloides. Wetland continues outside of survey area to north along the stream banks. Wetland hydrology provided by stream overflow, principally back up during high flow events caused by culvert under Oak Street Extension, along with roadside drainage from east as evidenced by wetland boundary extending up from the toe of slope in the area receiving this runoff.
Wetland has a significant herbaceous growth component underneath scrub-shrub growth on stream terrace.

Hydrology

Wetland Hydrology Indicators:

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

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [x] 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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [x] 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)
- [x] 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): 0	
Saturation Present? (includes capillary fringe)	Yes (●)	No ( )	Depth (inches): 9	Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

Primary and secondary hydrology indicators present. Hydrology provided by stream overflow along with roadside and hillside drainage from east. Drains to south, abutting intermittent stream s-bl-20200108-01. Soils saturated due to recent rainfall.

Wetland RLP-10

VEGETATION - Use scientific names of plant

Sampling Point: **w-bl-20200108-01**

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus americana*	5	☑	FACW
2. *Populus tremuloides*	5	☑	FACU
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Populus tremuloides*	10	☑	FACU
2. *Rhamnus cathartica*	20	☑	FAC
3. *Rosa multiflora*	10	☑	FACU
4. *Viburnum lentago*	5	☐	FAC
5. *Cornus racemosa*	10	☑	FAC
6.	0	☐	
7.	0	☐	
	55	= Total Cover	
Herb Stratum (Plot size: 5' r)			
1. *Epilobium coloratum*	5	☐	OBL
2. *Glyceria striata*	40	☑	OBL
3. *Solidago altissima*	10	☐	FACU
4. *Geum canadense*	5	☐	FAC
5. *Leersia oryzoides*	10	☐	OBL
6. *Onoclea sensibilis*	5	☐	FACW
7.		☐	
8.		☐	
9.		☐	
10.		☐	
11.	0	☐	
12.	0	☐	
	75	= Total Cover	
Woody Vine Stratum (Plot size: 30'r)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 57.1% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	55	x 1 =	55
FACW species	10	x 2 =	20
FAC species	40	x 3 =	120
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column Totals:	140 (A)		335 (B)

Prevalence Index = B/A = 2.393

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Photos included in Appendix D.

Hydrophytic vegetation indicators present including Dominance Test and Prevalence Index. All vegetation identified in undisturbed conditions.

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

Soil

Sampling Point: **w-bl-20200108-01**

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
0-14	10YR	3/1	90	10YR	5/8	10	C	M	Silt Loam	redox in pore linings also

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 prominent redox features in matrix of low value and low chroma; redox features present in both matrix and pore linings.

Based on site investigations this wetland meets the three criteria and is identified as a wetland comprised of PSS vegetation. This wetland extends to the north outside the survey area and is hydrologically abutting intermittent stream s-bl-20200108-01 flowing to the south, as shown on Figure 3.

Wetland RLP-11

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-bl-20200107-05

Investigator(s): B Leopold, R Massa | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.09783 | Long.: -80.59756 | Datum: NAD83

Soil Map Unit Name: BgB - Bogart loam, 2 to 6 percent slopes | NWI classification: n/a

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

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

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

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

Hydrophytic Vegetation Present?	Yes (●) No ( )	Is the Sampled Area within a Wetland? Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland w-bl-20200107-05 is a PEM wetland present in a depression of an otherwise elevated position. Topography and evidence of hydrology were utilized to determine the wetland boundary. This wetland is in a geomorphic position that concentrates flow from precipitation, and is hydrologically isolated in a scrubby, wooded area. Landscape and position indicates this may be a result of past disturbance activities.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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:

Wetland is located in a closed depression receiving precipitation from a small portion of the surrounding area and located near the highest elevation of the local landform. No obvious outflow or connectivity to any features.

Wetland RLP-11

VEGETATION - Use scientific names of plants

Sampling Point: **w-bl-20200107-05**

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Rhus typhina*	10	☑	UPL
2. *Cornus alba*	10	☑	FACW
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	20	= Total Cover	
Herb Stratum (Plot size: 5' r)			
1. *Scirpus atrovirens*	70	☑	OBL
2. *Symphyotrichum racemosum*	5	☐	FACW
3. *Agrimonia parviflora*	5	☐	FAC
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	80	= Total Cover	
Woody Vine Stratum (Plot size: 30'r)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	70	**x 1 =**	70
FACW species	15	**x 2 =**	30
FAC species	5	**x 3 =**	15
FACU species	0	**x 4 =**	0
UPL species	10	**x 5 =**	50
Column Totals:	100 **(A)**		165 **(B)**

Prevalence Index = B/A = 1.650

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Photos included in Appendix D.

Hydrophytic vegetation indicators present, predominantly herbaceous vegetation cover.

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

Sampling Point: **w-bl-20200107-05**

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
0-3	10YR	3/2	100						Silt Loam	
3-15	10YR	4/1	85	10YR	6/4	15	C	M	Silt Loam	redox matrix and pore linings

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☑ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 having redox features within matrix of low chroma and high value with redox concentrations present in matrix and pore linings in lower layer of soil profile, consistent with hydrological characteristics observed. Wetland is within a contained depression area. Several bricks were uncovered while attempting to excavate soil profile.

Based on site investigations this wetland meets the three criteria and is identified as a wetland comprised of PEM vegetation. This wetland was fully delineated and is not obviously hydrologically connected to any other surface feature, as shown on Figure 3.

Wetland RLP-12

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-bl-20200107-04

Investigator(s): B Leopold, R Massa | Section, Township, Range: S. | T. 2N | R. 2W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.09821 | Long.: -80.59622 | Datum: NAD83

Soil Map Unit Name: Se - Sebring silt loam, till substratum, 0 to 2 percent slopes | NWI classification: n/a

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

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

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

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

Hydrophytic Vegetation Present?	Yes (●) No ( )	Is the Sampled Area within a Wetland? Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland w-bl-20200107-02 is a PEM partially contained within a constructed drainage swale along a gravel drive extends into an adjoining low-lying area. Topography and evidence of hydrology were utilized to determine the wetland boundary. This wetland receives precipitation runoff from the adjacent upland areas and retains such runoff. No obvious hydrologic connectivity was present to wetland w-bl-20200106-01 across the gravel drive to the west, or to the south along the gravel drive to a roadside ditch draining to the east along Oak Street Extension,though Sebring silt loam is listed as a hydric soil (component 85% on terraces, consistent with this wetland setting).

An existing utility easement parallels the gravel drive along this wetland, likely providing the maintenance of the wetland vegetation community.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( ) No (●)	Depth (inches):	
Water Table Present?	Yes ( ) No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes (●) No ( )	Depth (inches): 4	Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

The wetland is located in and adjacent to a constructed drainage swale with no apparent outflow, providing the primary and secondary hydrology indicators observed.

Wetland RLP-12

VEGETATION - Use scientific names of plants

Sampling Point: **w-bl-20200107-04**

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Cornus alba*	15	☑	FACW
2. *Betula alleghaniensis*	5	☑	FAC
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	20	= Total Cover	
Herb Stratum (Plot size: 5' r)			
1. *Cinna arundinacea*	15	☑	FACW
2. *Juncus effusus*	10	☐	OBL
3. *Scirpus atrovirens*	30	☑	OBL
4. *Symphyotrichum racemosum*	10	☐	FACW
5. *Epilobium coloratum*	5	☐	OBL
6. *Symphyotrichum lateriflorum*	5	☐	FAC
7. *Solidago altissima*	10	☐	FACU
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	85	= Total Cover	
Woody Vine Stratum (Plot size: 30'r)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	45	**x 1 =**	45
FACW species	40	**x 2 =**	80
FAC species	10	**x 3 =**	30
FACU species	10	**x 4 =**	40
UPL species	0	**x 5 =**	0
Column Totals:	105 **(A)**		195 **(B)**

Prevalence Index = B/A = 1.857

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Photos included in Appendix D.

Hydrophytic vegetation indicators present. Infrequent, periodic maintenance of utility line and drainage swale along gravel drive may provide for maintenance of predominantly herbaceous vegetation community.

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

Soil

Sampling Point: **w-bl-20200107-04**

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
0-4	10YR	2/1	100						Silt Loam	
4-9	10YR	5/1	95	10YR	4/1	5	RM	M	Silt Loam	
9-15	10YR	4/1	90	10YR	4/4	10	C	M	Silt 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☑ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 having redox features within matrix of low chroma and high value in lower layer of soil profile, consistent with hydrological characteristics observed. Wetland is within a contained depression area.

Based on site investigations this wetland meets the three criteria and is identified as a wetland comprised of PEM vegetation. This wetland was fully delineated and is not obviously hydrologically connected to any other surface feature, as shown on Figure 3.

Wetland RLP-13

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 06-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-bl-20200106-01

Investigator(s): B Leopold, R Massa | Section, Township, Range: S. | T. 2N | R. 1W

Landform (hillslope, terrace, etc.): Flat | Local relief (concave, convex, none): concave | Slope: 2.0 % / 1.1 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.0984 | Long.: -80.5968 | Datum: NAD83

Soil Map Unit Name: Se - Sebring silt loam, till substratum, 0 to 2 percent slopes | NWI classification: N/A

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

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

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

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

Hydrophytic Vegetation Present?	Yes (●) No ( )	Is the Sampled Area within a Wetland? Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland w-bl-20200106-01 is a PSS wetland within a slight depression of flat plains. A portion of this wetland is within existing ROW that has recently been cleared, with remnant material indicates PSS just prior to clearing. Wetland boundary determined via topography, presence of water-stained leaves, dark/wet soils, green emergent vegetation present, and Rhamnus cathartica along edges. Wetland fully delineated, drains to west through small swale (no stream feature, flowing water present) to outside of study area. Point in very near wetland boundary.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☑ 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): 1
Water Table Present?	Yes (●) No ( )	Depth (inches): 11
Saturation Present? (includes capillary fringe)	Yes (●) No ( )	Depth (inches): 6

Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

Wetland is located in a lower area of flat topography, providing concentration of precipitation. Not isolated, drains to west outside study area.

Wetland RLP-13

VEGETATION - Use scientific names of plants

Sampling Point: **w-bl-20200106-01**

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Crataegus crus-galli*	3	☐	FAC
2.		☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	3	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Lonicera morrowii*	15	☑	FACU
2. *Viburnum lentago*	30	☑	FAC
3. *Rhamnus cathartica*	10	☐	FAC
4. *Betula alleghaniensis*	5	☐	FAC
5.	0	☐	
6.	0	☐	
7.	0	☐	
	60	= Total Cover	
Herb Stratum (Plot size: 5' r)			
1. *Glyceria striata*	60	☑	OBL
2. *Festuca rubra*	5	☐	FACU
3. *Epilobium coloratum*	3	☐	OBL
4. *Solidago altissima*	5	☐	FACU
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	73	= Total Cover	
Woody Vine Stratum (Plot size: 30'r)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	63	**x 1 =**	63
FACW species	0	**x 2 =**	0
FAC species	48	**x 3 =**	144
FACU species	25	**x 4 =**	100
UPL species	0	**x 5 =**	0
Column Totals:	136	**(A)**	307 **(B)**

Prevalence Index = B/A = 2.257

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.

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Photos included in Appendix D.
Tree layer does not apply for dominance (<5% cover). Portion of wetland has been recently cleared/mowed. Remnant vegetation material dominated by sapling/shrub similar to non-cleared area.

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

Soil

Sampling Point: **w-bl-20200106-01**

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	2.5Y	3/1	95	7.5YR	4/6	5	C	PL	Silty Clay Loam	
4-16	5YR	4/1	80	7.5YR	4/6	20	C	M	Silty 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☑ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Prominent redox concentrations with low chroma and value present several hydric soil indicators consistent with hydrology characteristics.

Based on site investigations this wetland meets the three criteria and is identified as a wetland comprised of PSS vegetation with a portion recently cleared/mowed. Wetland appears to be hydrologically connected to a large NWI mapped feature to the west of the survey area via a non-jurisdictional wet weather conveyance, as shown on Figure 3.

Wetland RLP-14

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-bl-20200107-03

Investigator(s): B Leopold, R Massa | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.09959 | Long.: -80.59617 | Datum: NAD83

Soil Map Unit Name: FhB - Fitchville silt loam, till substratum, 2 to 6 percent slopes | NWI classification: n/a

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

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

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

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

Hydrophytic Vegetation Present?	Yes (●) No ( )	Is the Sampled Area within a Wetland? Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland w-bl-20200107-03 is a PFO wetland present in a micro depression of an otherwise flat wooded plain. The wetland boundary includes a constructed drainage swale along the gravel drive having a minor cover of sapling/shrub vegetation. Topography, evidence of hydrology and morphological adaptations on trees were utilized to determine the wetland boundary. This wetland is in a geomorphic position that will concentrate flow from precipitation, and is hydrologically connected to wetland w-bl-20200107-02 to the north via the constructed drainage swale along the gravel drive.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☑ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( ) No (●)	Depth (inches):	
Water Table Present?	Yes ( ) No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ( ) No (●)	Depth (inches):	Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

This wetland is located in a depression area concentrating precipitation and providing the primary and secondary hydrology indicators observed.

Wetland RLP-14

VEGETATION - Use scientific names of plants

Sampling Point: **w-bl-20200107-03**

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	60	☑	FAC
2. *Quercus palustris*	30	☑	FACW
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Acer rubrum*	10	☑	FAC
2. *Ulmus americana*	10	☑	FACW
3. *Smilax glauca*	3	☐	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	23	= Total Cover	
Herb Stratum (Plot size: 5' r)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30'r)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	40	x 2 =	80	
FAC species	70	x 3 =	210	
FACU species	3	x 4 =	12	
UPL species	0	x 5 =	0	
Column Totals:	113	(A)	302	(B)

Prevalence Index = B/A = 2.673

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Photos included in Appendix D.

Hydrophytic vegetation indicators present. Infrequent, periodic maintenance of utility line along gravel drive has not significantly affected the strata composition of the wetland so was not called out specifically. Herbaceous vegetation present limited to an unidentified Carex sp. of very limited absolute cover.

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

Soil

Sampling Point: **w-bl-20200107-03**

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
0-5	10YR	4/2	80	10YR	4/6	20	C	M/PL	Silt Loam	
5-11	10YR	6/1	80	10YR	5/8	20	C	M	Silty Clay	
11-16	10YR	6/1	50						Silty Clay Loam	
	10YR	5/8	50							

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☑ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 having redox features within matrix of low chroma and value in upper layers of soil profile, consistent with hydrological characteristics observed. Wetland is within a depression area of an otherwise flat plain.

Based on site investigations this wetland meets the three criteria and is identified as a wetland comprised of PFO vegetation. This wetland was fully delineated and is hydrologically connected to wetland w-bl-20200107-02 to the north via a short roadside drainage swale, as shown on Figure 3.

Wetland RLP-15a

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-bl-20200107-02a

Investigator(s): B Leopold, R Massa | Section, Township, Range: S. | T. 2N | R. 1W

Landform (hillslope, terrace, etc.): Swale | Local relief (concave, convex, none): concave | Slope: 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.10164 | Long.: -80.59592 | Datum: NAD83

Soil Map Unit Name: JtB - Jimtown loam, 2 to 6 percent slopes | NWI classification: n/a

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

Are Vegetation [ ], Soil [ ], or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

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

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

Hydrophytic Vegetation Present?	Yes (●) No ( )	Is the Sampled Area within a Wetland? Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks: (Explain alternative procedures here or in a separate report.)

PEM component of w-bl-20200107-02, a PEM/SS wetland complex. The PEM component is limited to a constructed drainage swale around a cellular tower site and gravel drive, draining to the south to the PSS component (w-bl-20200107-02b) that extends into the adjoining scrub-shrub community. Topography and evidence of hydrology were utilized to determine the wetland boundary. This wetland receives hydrology from the adjacent wetland w-bl-20200107-01 to the north via roadside drainage swales, and is hydrologically connected to wetland w-bl-20200106-02 to the west via two culverts under the gravel drive.

An existing utility easement parallels the gravel drive along this wetland, likely providing the PSS component as distinguished from the adjacent wooded upland.

Hydrology

Wetland Hydrology Indicators:

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

- [ ] Surface Water (A1)
- [x] High Water Table (A2)
- [x] 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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [x] 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)
- [x] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [x] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( ) No (●)	Depth (inches):	
Water Table Present?	Yes (●) No ( )	Depth (inches):	7
Saturation Present? (includes capillary fringe)	Yes (●) No ( )	Depth (inches):	5

Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

This wetland component is mostly limited to a constructed drainage swale concentrating precipitation and providing the primary and secondary hydrology indicators observed. This wetland also receives drainage from the adjacent wetland w-bl-20200107-01 to the north via a drainage swale.

Wetland RLP-15a

VEGETATION - Use scientific names of plants

Sampling Point: **w-bl-20200107-02a**

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Acer rubrum*	15	☑	FAC
2. *Cornus racemosa*	5	☑	FAC
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	20	= Total Cover	
Herb Stratum (Plot size: 5' r)			
1. *Carex frankii*	5	☐	OBL
2. *Scirpus atrovirens*	60	☑	OBL
3. *Symphyotrichum lateriflorum*	5	☐	FAC
4. *Carex blanda*	5	☐	FAC
5. *Dichanthelium dichotomum*	10	☐	FAC
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	85	= Total Cover	
Woody Vine Stratum (Plot size: 30'r)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	65	**x 1 =**	65	
FACW species	0	**x 2 =**	0	
FAC species	40	**x 3 =**	120	
FACU species	0	**x 4 =**	0	
UPL species	0	**x 5 =**	0	
Column Totals:	105	**(A)**	185	**(B)**

Prevalence Index = B/A = 1.762

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Photos included in Appendix D.

PEM component of wetland did not have any recent vegetation disturbances present. Hydrophytic vegetation indicators present including presence of obligate wetland species.

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

Soil

Sampling Point: **w-bl-20200107-02a**

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	85	7.5YR	5/6	5	C	PL	Silt Loam	
				10YR	6/6	10	C	M		
3-10	10YR	4/1	60	10YR	6/8	30	C	M	Silty Clay Loam	
				10YR	6/1	10	D	M		
10-16	2.5Y	6/4	75	10YR	4/3	20	D	M	Silty Clay	
				10YR	5/8	5	C	M		

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☑ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 having redox features within matrix of low chroma and value in upper layers of soil profile, consistent with hydrological characteristics observed. Wetland is within a depression area (drainage swale).

Based on site investigations this wetland meets the three criteria and is identified as a wetland comprised of PEM vegetation as part of a larger PEM/SS wetland complex. This wetland was fully delineated and is hydrologically connected to wetland w-bl-20200106-02 to the west, as shown on Figure 3.

Wetland RLP-15b

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-bl-20200107-02b

Investigator(s): B Leopold, R Massa | Section, Township, Range: S. | T. 2N | R. 1W

Landform (hillslope, terrace, etc.): Swale | Local relief (concave, convex, none): concave | Slope: 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.10069 | Long.: -80.59623 | Datum: NAD83

Soil Map Unit Name: FhB - Fitchville silt loam, till substratum, 2 to 6 percent slopes | NWI classification: n/a

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

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

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

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

Hydrophytic Vegetation Present?	Yes (●) No ( )	Is the Sampled Area within a Wetland? Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks: (Explain alternative procedures here or in a separate report.)

PSS component of w-bl-20200107-02, a PEM/SS wetland complex. The PSS component includes a constructed drainage swale along the gravel drive and adjoining low-lying area, draining the PEM component to the north (w-bl-20200107-02a). Topography and evidence of hydrology were utilized to determine the wetland boundary. This wetland receives hydrology from the adjacent wetland w-bl-20200107-01 to the north via roadside drainage swales, and is hydrologically connected to wetland w-bl-20200106-02 to the west via two culverts under the gravel drive.

An existing utility easement parallels the gravel drive along this wetland, likely providing the PSS component as distinguished from the adjacent wooded upland.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☑ 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):	1
Water Table Present?	Yes (●) No ( )	Depth (inches):	6
Saturation Present? (includes capillary fringe)	Yes (●) No ( )	Depth (inches):	2

Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

This wetland component includes a constructed drainage swale concentrating precipitation and providing the primary and secondary hydrology indicators observed. This wetland also receives drainage from the adjacent wetland w-bl-20200107-01 to the north via a drainage swale.

Wetland RLP-15b

VEGETATION - Use scientific names of plants

Sampling Point: **w-bl-20200107-02b**

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	15	☑	FAC
2. *Ulmus americana*	5	☑	FACW
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Ulmus americana*	10	☑	FACW
2. *Acer rubrum*	20	☑	FAC
3. *Cornus racemosa*	5	☐	FAC
4. *Lindera benzoin*	10	☑	FACW
5. *Carpinus caroliniana*	10	☑	FAC
6.	0	☐	
7.	0	☐	
	55	= Total Cover	
Herb Stratum (Plot size: 5' r)			
1. *Smilax glauca*	5	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	5	= Total Cover	
Woody Vine Stratum (Plot size: 30'r)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= 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: 7 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 85.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	25	x 2 =	50	
FAC species	50	x 3 =	150	
FACU species	5	x 4 =	20	
UPL species	0	x 5 =	0	
Column Totals:	80	(A)	220	(B)

Prevalence Index = B/A = 2.750

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.

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Photos included in Appendix D.

PSS component of wetland did not have any recent vegetation disturbances present. Hydrophytic vegetation indicators present. Infrequent, periodic maintenance of utility line along gravel drive may maintain the vegetation community in a non-forested condition.

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

Sampling Point: **w-bl-20200107-02b**

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
0-8	10YR	2/1	90	10YR	4/6	10	C	PL	Silt Loam	
8-16	10YR	6/8	40	10YR	3/1	30	D	M	Silty Clay	
				10YR	6/2	30	D	M		

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☑ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 having redox features within matrix of low chroma and value in upper layer of soil profile, consistent with hydrological characteristics observed. Wetland is within a depression area (drainage swale).

Based on site investigations this wetland meets the three criteria and is identified as a wetland comprised of PSS vegetation as part of a larger PEM/SS wetland complex. This wetland was fully delineated and is hydrologically connected to wetland w-bl-20200106-02 to the west, as shown on Figure 3.

Wetland RLP-16a

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 06-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-bl-20200106-02a

Investigator(s): B Leopold, R Massa | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.10088 | Long.: -80.59675 | Datum: NAD83

Soil Map Unit Name: FhB - Fitchville silt loam, till substratum, 2 to 6 percent slopes | NWI classification: N/A

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

Are Vegetation [ ], Soil [ ], or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

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

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

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	Is the Sampled Area within a Wetland? Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks: (Explain alternative procedures here or in a separate report.)

PFO component of wetland w-bl-20200106-02. Wetland continues to west outside of survey area, likely connected to large mapped-NWI. Wetland is present across a slightly undulating portion of flat topography, including PSS and recently cleared/mowed components (w-02b and w-02c, respectively). Wetland boundary identified by surface water, saturated soils, darker soil colors, preponderance of FACU scrub/shrub vegetation.

Hydrology

Wetland Hydrology Indicators:

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

- [ ] Surface Water (A1)
- [x] High Water Table (A2)
- [x] 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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [x] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] Hydrogen Sulfide Odor (C1)
- [x] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [x] 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)
- [x] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes (●)	No ( )	Depth (inches): 5	
Saturation Present? (includes capillary fringe)	Yes (●)	No ( )	Depth (inches): 3	Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

Wetland located in slightly undulating flat plain allowing concentration of precipitation. Additional sources of hydrology include surface drainge from two wetlands located east of gravel drive through at least 2 culverts.

Wetland RLP-16a

VEGETATION - Use scientific names of plants

Sampling Point: **w-bl-20200106-02a**

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	☑	FAC
2. *Quercus palustris*	30	☑	FACW
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Ulmus americana*	10	☑	FACW
2. *Acer rubrum*	15	☑	FAC
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	25	= Total Cover	
Herb Stratum (Plot size: 5' r)			
1. *Carex frankii*	5	☑	OBL
2. *Solidago altissima*	5	☑	FACU
3.		☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	10	= Total Cover	
Woody Vine Stratum (Plot size: 30'r)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	5	**x 1 =**	5	
FACW species	40	**x 2 =**	80	
FAC species	45	**x 3 =**	135	
FACU species	5	**x 4 =**	20	
UPL species	0	**x 5 =**	0	
Column Totals:	95	**(A)**	240	**(B)**

Prevalence Index = B/A = 2.526

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.

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Photos included in Appendix D.

PFO component of wetland did not have any recent disturbances present.

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

Soil

Sampling Point: **w-bl-20200106-02a**

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	7.5YR	3/1	98	7.5YR	4/6	2	C	PL	Silt Loam	
5-11	10YR	3/2	95	7.5YR	4/6	5	C	PL	Silty Clay Loam	
11-16	10YR	6/1	60						Silty Clay Loam	
	10YR	5/8	40							

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 having redox features within matrix of low chroma and value in upper layer of soil profile, consistent with hydrological characteristics observed. Wetland is not within a closed depression area.

Based on site investigations this wetland meets the three criteria and is identified as a wetland comprised of PFO vegetation as part of a larger PFO/SS wetland complex. Wetland boundary continues to west outside of survey area and appears to be contiguous with a large NWI mapped feature mapped to the west of the survey area, as shown on Figure 3.

Wetland RLP-16b

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 06-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-bl-20200106-02b

Investigator(s): B Leopold, R Massa | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.10099 | Long.: -80.59697 | Datum: NAD83

Soil Map Unit Name: FhB - Fitchville silt loam, till substratum, 2 to 6 percent slopes | NWI classification: N/A

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

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

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

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

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	Is the Sampled Area within a Wetland? Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks: (Explain alternative procedures here or in a separate report.)

PSS component of wetland w-bl-20200106-02. Wetland continues to west outside of survey area, likely connected to large mapped-NWI. Wetland is present across a slightly undulating portion of flat topography, including PFO and recently cleared/mowed components (w-02a and w-02c, respectively). Wetland boundary identified by surface water, saturated soils, darker soil colors, preponderance of FACU scrub/shrub vegetation. Component includes mapped-NWI (PSS1C) partially within survey area.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☑ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes ( )	No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):	Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

Wetland located in slightly undulating flat plain allowing concentration of precipitation. Additional sources of hydrology include surface drainge from two wetlands located east of gravel drive through at least 2 culverts.

Wetland RLP-16b

VEGETATION - Use scientific names of plants

Sampling Point: **w-bl-20200106-02b**

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.		☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Acer rubrum*	20	☑	FAC
2. *Cornus racemosa*	10	☑	FAC
3. *Cornus alba*	10	☑	FACW
4. *Smilax glauca*	5	☐	FACU
5. *Rhamnus cathartica*	10	☑	FAC
6.	0	☐	
7.	0	☐	
	55	= Total Cover	
Herb Stratum (Plot size: 5' r)			
1. *Toxicodendron radicans*	30	☑	FAC
2. *Dichanthelium dichotomum*	5	☐	FAC
3. *Phragmites australis*	5	☐	FACW
4. *Parathelypteris noveboracensis*	2	☐	FAC
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	42	= Total Cover	
Woody Vine Stratum (Plot size: 30'r)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	**x 1 =**	0	
FACW species	15	**x 2 =**	30	
FAC species	77	**x 3 =**	231	
FACU species	5	**x 4 =**	20	
UPL species	0	**x 5 =**	0	
Column Totals:	97	**(A)**	281	**(B)**

Prevalence Index = B/A = 2.897

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.

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Photos included in Appendix D.

Undisturbed PSS component of wetland appears to be in an old, overgrown former utility corridor passing north-south, directly connected to mapped-NWI wetland (PSS1C).

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

Soil

Sampling Point: **w-bl-20200106-02b**

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	7.5YR	3/1	98	7.5YR	4/6	2	C	PL	Silt Loam	
5-11	10YR	3/2	95	7.5YR	4/6	5	C	PL	Silty Clay Loam	
11-16	10YR	6/1	60						Silty Clay Loam	
	10YR	5/8	40							

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 having redox features within matrix of low chroma and value in upper layer of soil profile, consistent with hydrological characteristics observed. Wetland is not within a closed depression area.

Based on site investigations this wetland meets the three criteria and is identified as a wetland comprised of PSS vegetation as part of a larger PFO/SS wetland complex. Wetland boundary continues to west outside of survey area and appears to be contiguous with a large NWI mapped feature mapped to the west of the survey area, as shown on Figure 3.

Wetland RLP-16c

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-bl-20200106-02c

Investigator(s): B Leopold, R Massa | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.10212 | Long.: -80.59643 | Datum: NAD83

Soil Map Unit Name: JtB - Jimtown loam, 2 to 6 percent slopes | NWI classification: N/A

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

Are Vegetation [✓], Soil [ ], or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes ( ) No (●)

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

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

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	Is the Sampled Area within a Wetland? Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks: (Explain alternative procedures here or in a separate report.)

Recently cleared/mowed component of wetland w-bl-20200106-02 within existing powerline ROW. Wetland continues to west outside of survey area, likely connected to large mapped-NWI. Wetland is present across a slightly undulating portion of flat topography, including PFO and PSS components (w-02a and w-02b, respectively). Wetland boundary identified by surface water, saturated soils, darker soil colors, remnant vegetation identifiable as facultative wet species consistent with that identified in w-bl-20200106-02b.

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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [✓] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [✓] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [✓] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [✓] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes (●)	No ( )	Depth (inches): 7	
Saturation Present? (includes capillary fringe)	Yes (●)	No ( )	Depth (inches): 3	Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

Wetland located in slightly undulating flat plain allowing concentration of precipitation. Additional sources of hydrology include surface drainge from two wetlands located east of gravel drive through at least 2 culverts.

Wetland RLP-16c

VEGETATION - Use scientific names of plants

Sampling Point: **w-bl-20200106-02c**

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30' r)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Betula alleghaniensis*	15	☑	FAC
2. *Cornus alba*	15	☑	FACW
3. *Lonicera morrowii*	15	☑	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	45	= Total Cover	
Herb Stratum (Plot size: 5' r)			
1. *Scirpus atrovirens*	30	☑	OBL
2. *Carex frankii*	20	☑	OBL
3. *Agrimonia parviflora*	5	☐	FAC
4. *Scirpus cyperinus*	5	☐	OBL
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	60	= Total Cover	
Woody Vine Stratum (Plot size: 30'r)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	55	**x 1 =**	55	
FACW species	15	**x 2 =**	30	
FAC species	20	**x 3 =**	60	
FACU species	15	**x 4 =**	60	
UPL species	0	**x 5 =**	0	
Column Totals:	105	**(A)**	205	**(B)**

Prevalence Index = B/A = 1.952

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.

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Photos included in Appendix D.

Sapling/shrub vegetation identified from residual materials present in recently cleared/mowed powerline ROW, consistent with vegetation observed at wetland data point w-bl-20200106-02 (PSS component un-disturbed). Herbaceous vegetation readily identifiable from both live and remnant parts.

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

Wetland RLP-16c

Soil

Sampling Point: **w-bl-20200106-02c**

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	2.5Y	3/2	95	10YR	3/6	5	C	PL	Silty Clay Loam	
6-16	2.5Y	6/2	80	2.5Y	6/8	15	C	M	Clay	
				10YR	4/6	5	C	M		

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 having redox features within matrix of low chroma and value in upper layer of soil profile, and low chroma and high value in lower layer of soil profile, consistent with hydrological characteristics observed. Wetland is not within a closed depression area. Portion of this component abutting the existing substation (along north end of survey area) exhibited deep ruts (exceeding 24" depth) from recent heavy equipment activity clearing vegetation, indicative of deep, saturated soils.

Based on site investigations this wetland meets the three criteria and is identified as a wetland formerly comprised of PSS vegetation (prior to clearing/mowing disturbance) as part of a larger PFO/SS wetland complex. Wetland boundary continues to west outside of survey area and appears to be contiguous with a large NWI mapped feature mapped to the west of the survey area, as shown on Figure 3.

Wetland RLP-17a

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-bl-20200107-02a

Investigator(s): B Leopold, R Massa | Section, Township, Range: S. | T. 2N | R. 1W

Landform (hillslope, terrace, etc.): Swale | Local relief (concave, convex, none): concave | Slope: 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.10164 | Long.: -80.59592 | Datum: NAD83

Soil Map Unit Name: JtB - Jimtown loam, 2 to 6 percent slopes | NWI classification: n/a

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

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

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

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

Hydrophytic Vegetation Present?	Yes (●) No ( )	Is the Sampled Area within a Wetland? Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks: (Explain alternative procedures here or in a separate report.)

PEM component of w-bl-20200107-02, a PEM/SS wetland complex. The PEM component is limited to a constructed drainage swale around a cellular tower site and gravel drive, draining to the south to the PSS component (w-bl-20200107-02b) that extends into the adjoining scrub-shrub community. Topography and evidence of hydrology were utilized to determine the wetland boundary. This wetland receives hydrology from the adjacent wetland w-bl-20200107-01 to the north via roadside drainage swales, and is hydrologically connected to wetland w-bl-20200106-02 to the west via two culverts under the gravel drive.

An existing utility easement parallels the gravel drive along this wetland, likely providing the PSS component as distinguished from the adjacent wooded upland.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☑ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( ) No (●)	Depth (inches):	
Water Table Present?	Yes (●) No ( )	Depth (inches):	7
Saturation Present? (includes capillary fringe)	Yes (●) No ( )	Depth (inches):	5

Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

This wetland component is mostly limited to a constructed drainage swale concentrating precipitation and providing the primary and secondary hydrology indicators observed. This wetland also receives drainage from the adjacent wetland w-bl-20200107-01 to the north via a drainage swale.

Wetland RLP-17a

VEGETATION - Use scientific names of plants

Sampling Point: **w-bl-20200107-02a**

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Acer rubrum*	15	☑	FAC
2. *Cornus racemosa*	5	☑	FAC
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	20	= Total Cover	
Herb Stratum (Plot size: 5' r)			
1. *Carex frankii*	5	☐	OBL
2. *Scirpus atrovirens*	60	☑	OBL
3. *Symphyotrichum lateriflorum*	5	☐	FAC
4. *Carex blanda*	5	☐	FAC
5. *Dichanthelium dichotomum*	10	☐	FAC
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	85	= Total Cover	
Woody Vine Stratum (Plot size: 30'r)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	65	**x 1 =**	65	
FACW species	0	**x 2 =**	0	
FAC species	40	**x 3 =**	120	
FACU species	0	**x 4 =**	0	
UPL species	0	**x 5 =**	0	
Column Totals:	105	**(A)**	185	**(B)**

Prevalence Index = B/A = 1.762

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Photos included in Appendix D.

PEM component of wetland did not have any recent vegetation disturbances present. Hydrophytic vegetation indicators present including presence of obligate wetland species.

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

Soil

Sampling Point: **w-bl-20200107-02a**

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	85	7.5YR	5/6	5	C	PL	Silt Loam	
				10YR	6/6	10	C	M		
3-10	10YR	4/1	60	10YR	6/8	30	C	M	Silty Clay Loam	
				10YR	6/1	10	D	M		
10-16	2.5Y	6/4	75	10YR	4/3	20	D	M	Silty Clay	
				10YR	5/8	5	C	M		

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☑ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 having redox features within matrix of low chroma and value in upper layers of soil profile, consistent with hydrological characteristics observed. Wetland is within a depression area (drainage swale).

Based on site investigations this wetland meets the three criteria and is identified as a wetland comprised of PEM vegetation as part of a larger PEM/SS wetland complex. This wetland was fully delineated and is hydrologically connected to wetland w-bl-20200106-02 to the west, as shown on Figure 3.

Wetland RLP-17b

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: w-bl-20200107-01b

Investigator(s): B Leopold, R Massa | Section, Township, Range: S. | T. 2N | R. 1W

Landform (hillslope, terrace, etc.): Hillside | Local relief (concave, convex, none): convex | Slope: 5.0 % / 2.9 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.10264 | Long.: -80.59466 | Datum: NAD83

Soil Map Unit Name: JtB - Jimtown loam, 2 to 6 percent slopes | NWI classification: n/a

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

Are Vegetation [✓], Soil [ ], or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes ( ) No (●)

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

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

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	Is the Sampled Area within a Wetland? Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland w-bl-20200107-01 is a PEM/SS/FO wetland occurring across flat plains and hillslope adjacent to the existing Oak Street substation. A portion of this wetland is within existing formerly disturbed/graded area for substation construction (w-bl-20200107-01a, PEM), with the hillslope portion (w-bl-20200107-01b, PSS) being formerly wooded and cleared 2+ years ago, with felled timber remaining. The remaining portion of this wetland complex (w-bl-20200107-01c, PFO) is relatively undisturbed. Wetland boundary determined in parts via topography, dark/wet soils, presence/absence of Scirpus spp., Epilobium spp. And preponderance of Smilax spp. Wetland continues outside of survey area to north (PEM component) via drainage ditch along substation edge and swale (draining to north), as well as to the southeast (PFO component) for a limited extent. Wetland hydrology drains to north outside survey area via ditch and to south along gravel drive via a roadside drainage swale to wetland w-bl-20200107-02.

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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [✓] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [✓] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes ( )	No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes (●)	No ( )	Depth (inches): 7	Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

PSS component present across previously cleared hillside with primary and secondary hydrology indicators present. Suspect microtopography and vegetation provides for adequate retention of precipitation, as well as surface drainage from PFO portion at higher elevation.

Wetland RLP-17b

VEGETATION - Use scientific names of plants

Sampling Point: **w-bl-20200107-01b**

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Betula alleghaniensis*	25	☑	FAC
2. *Fagus grandifolia*	5	☐	FACU
3. *Rubus occidentalis*	5	☐	UPL
4. *Rubus allegheniensis*	10	☑	FACU
5. *Smilax glauca*	5	☐	FACU
6.	0	☐	
7.	0	☐	
	50	= Total Cover	
Herb Stratum (Plot size: 5' r)			
1. *Cinna arundinacea*	30	☑	FACW
2. *Scirpus cyperinus*	20	☑	OBL
3. *Persicaria sagittata*	20	☑	OBL
4. *Solidago canadensis*	10	☐	FACU
5. *Panicum dichotomiflorum*	5	☐	FACW
6. *Epilobium coloratum*	10	☐	OBL
7. *Symphyotrichum racemosum*	5	☐	FACW
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30'r)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	50	x 1 =	50	
FACW species	40	x 2 =	80	
FAC species	25	x 3 =	75	
FACU species	30	x 4 =	120	
UPL species	5	x 5 =	25	
Column Totals:	150	(A)	350	(B)

Prevalence Index = B/A = 2.333

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Photos included in Appendix D.

PSS component of wetland previously forested, cleared 2+ years ago, with extensive felled timber remaining. Sapling/shrub vegetation actively recovering, herbaceous vegetation growth extensive due to relatively recent increase in solar exposure.

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

Sampling Point: **w-bl-20200107-01b**

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
0-8	10YR	3/1	95	10YR	3/4	5	C	M	Silt Loam	
8-16	10YR	6/4	60	10YR	3/4	5	C	M	Silt Loam	
				10YR	3/1	25	D	M		
				7.5YR	5/6	15	C	M		

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 having redox features within matrix of low chroma and value in upper layer of soil profile, consistent with hydrological characteristics observed. Wetland data point is not within a closed depression area.

Based on site investigations this wetland meets the three criteria and is identified as a wetland comprised of PSS vegetation as part of a larger PEM/SS/FO wetland complex. Wetland is hydrologically connected to wetland w-bl-20200107-02 to the south via wet weather conveyance. Wetland continues to north and southeast outside survey area as shown on Figure 3.

Wetland RLP-17c

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: w-bl-20200107-01c

Investigator(s): B Leopold, R Massa | Section, Township, Range: S. | T. 2N | R. 1W

Landform (hillslope, terrace, etc.): Flat | Local relief (concave, convex, none): concave | Slope: 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.10201 | Long.: -80.59523 | Datum: NAD83

Soil Map Unit Name: JtB - Jimtown loam, 2 to 6 percent slopes | NWI classification: n/a

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

Are Vegetation [ ], Soil [ ], or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

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

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

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	Is the Sampled Area within a Wetland? Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland w-bl-20200107-01 is a PEM/SS/FO wetland occurring across flat plains and hillslope adjacent to the existing Oak Street substation. A portion of this wetland is within existing formerly disturbed/graded area for substation construction (w-bl-20200107-01a, PEM), with the hillslope portion (w-bl-20200107-01b, PSS) being formerly wooded and cleared 2+ years ago, with felled timber remaining. The remaining portion of this wetland complex (w-bl-20200107-01c, PFO) is relatively undisturbed. Wetland boundary determined in parts via topography, microtopographic relief, and preponderance of Smilax spp. Wetland continues outside of survey area to north (PEM component) via drainage ditch along substation edge and swale (draining to north), as well as to the southeast (PFO component) for a limited extent. Wetland hydrology drains to north outside survey area via ditch and to south along gravel drive via a roadside drainage swale to wetland w-bl-20200107-02.

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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [x] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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)
- [x] Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- [ ] Surface Soil Cracks (B6)
- [ ] 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)
- [x] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [x] Microtopographic Relief (D4)
- [x] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes ( )	No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):	Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

PFO component in a shallow depressional area across relatively flat landscape, providing concentration and retention of precipitation within this component, consistent with primary and secondary hydrology indicators. Morphological adaptations on trees evident (buttress-based, shallow roots) around wetland boundary.

Wetland RLP-17c

VEGETATION - Use scientific names of plants

Sampling Point: **w-bl-20200107-01c**

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	40	☑	FAC
2. *Quercus palustris*	30	☑	FACW
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Acer rubrum*	20	☑	FAC
2. *Lindera benzoin*	15	☑	FACW
3. *Hamamelis virginiana*	5	☐	FACU
4. *Betula alleghaniensis*	5	☐	FAC
5. *Rubus allegheniensis*	3	☐	FACU
6.	0	☐	
7.	0	☐	
	48	= Total Cover	
Herb Stratum (Plot size: 5' r)			
1. *Scirpus atrovirens*	25	☑	OBL
2. *Carex frankii*	5	☐	OBL
3. *Solidago canadensis*	10	☑	FACU
4. *Cinna arundinacea*	10	☑	FACW
5. *Elymus virginicus*	5	☐	FACW
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	55	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= 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: 7 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 85.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	**x 1 =**	30
FACW species	60	**x 2 =**	120
FAC species	65	**x 3 =**	195
FACU species	18	**x 4 =**	72
UPL species	0	**x 5 =**	0
Column Totals:	173 **(A)**		417 **(B)**

Prevalence Index = B/A = 2.410

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Photos included in Appendix D.

PFO component of wetland with hydrophytic vegetation indicators present including presence of obligate and facultative wetland plants.

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

Soil

Sampling Point: **w-bl-20200107-01c**

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	3/1	80	7.5YR	4/6	20	C	M	Silt Loam	
4-16	10YR	3/1	50	2.5Y	6/1	30	D	M	Silty Clay Loam	
				10YR	5/8	20	C	M		

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☑ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 having redox features within matrix of low chroma and value throughout soil profile, consistent with hydrological characteristics observed. Wetland data point is within a depression area on a flat plain.

Based on site investigations this wetland meets the three criteria and is identified as a wetland comprised of PFO vegetation as part of a larger PEM/SS/FO wetland complex. Wetland is hydrologically connected to wetland w-bl-20200107-02 to the south via wet weather conveyance. Wetland continues to north and southeast outside survey area as shown on Figure 3.

Wetland RLP-18a

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-aeh-20200107-09a

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.092271 | Long.: -80.602741 | Datum: WGS 84

Soil Map Unit Name: JuB-Jimtown loam, till substratum, 2 to 6 percent slopes | NWI classification: NA

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, et

Hydrophytic Vegetation Present?	Yes (●) No ( )	Is the Sampled Area within a Wetland? Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks: (Explain alternative procedures here or in a separate report.)

Wetland is located west of an existing roadway and surrounded by commerical and residential lots. It occurs in a lowland area on the west side of Lamar Ave. This data point is for the PEM portion of the PEM/PFO wetland complex. The wetland boundary was determined by the preponderance of hydrophytic herbeceous vegetation, particularly Carex vulpinoidea.

Hydrology

Wetland Hydrology Indicators:

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

- [x] Surface Water (A1)
- [x] High Water Table (A2)
- [x] 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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [x] 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)
- [x] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [x] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes (●) No ( )	Depth (inches):	0.25
Water Table Present?	Yes (●) No ( )	Depth (inches):	2
Saturation Present? (includes capillary fringe)	Yes (●) No ( )	Depth (inches):	0

Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

Wetland receives hydrology from precipitation and runoff from the roadway.

Wetland RLP-18a

VEGETATION - Use scientific names of plant

Sampling Point: **w-aeh-20200107-09a**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. *Carex vulpinoidea*	40	☑	OBL
2. *Juncus effusus*	15	☑	OBL
3. *Sorghum halepense*	15	☑	FACU
4. *Symphyotrichum ericoides*	10	☐	FACU
5. *Rumex crispus*	5	☐	FAC
6. *Daucus carota*	5	☐	UPL
7. *Poa palustris*	5	☐	FACW
8. *Phalaris arundinacea*	5	☐	FACW
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	55	**x 1 =**	55
FACW species	10	**x 2 =**	20
FAC species	5	**x 3 =**	15
FACU species	25	**x 4 =**	100
UPL species	5	**x 5 =**	25
Column Totals:	100 **(A)**		215 **(B)**

Prevalence Index = B/A = 2.150

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the wetland area. Photographs are located in Appendix D.

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

Wetland RLP-18a

Soil

Sampling Point: **w-aeh-20200107-09a**

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
0-18	10YR	4/1	90	7.5YR	5/8	10	C	M	Silty 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Depleted matrix was met for this wetland area.

Based on our site investigations, AECOM identified that the wetland meet all three criteria and classifed this area as a wetland. The wetland is represented by PFO and PEM wetland components.

Wetland RLP-18b

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-aeh-20200107-09b

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.092341 | Long.: -80.602772 | Datum: WGS 84

Soil Map Unit Name: JuB-Jimtown loam, till substratum, 2 to 6 percent slopes | NWI classification: NA

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, et

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: (Explain alternative procedures here or in a separate report.)

Wetland is located west of an existing roadway on either side of w-aeh-20200107-09a and surrounded by commerical and residential lots. It occurs in a lowland area on the west side of Lamar Ave. This data point is for the PFO portion of the PEM/PFO wetland complex. The wetland boundary was determined by the preponderance of hydrophytic large trees and smaller trees, particularly Quercus palustris and Acer negundo.

Hydrology

Wetland Hydrology Indicators:

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

- [x] Surface Water (A1)
- [x] High Water Table (A2)
- [x] 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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [x] 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)
- [x] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [x] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes (●)	No ( )	Depth (inches): 0.25	
Water Table Present?	Yes (●)	No ( )	Depth (inches): 5	
Saturation Present? (includes capillary fringe)	Yes (●)	No ( )	Depth (inches): 0	Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

Wetland receives hydrology from precipitation and runoff from the roadway.

Wetland RLP-18b

VEGETATION - Use scientific names of plant

Sampling Point: **w-aeh-20200107-09b**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus palustris*	30	☑	FACW
2. *Ulmus rubra*	10	☑	FAC
3. *Acer negundo*	5	☐	FAC
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	45	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15ft)			
1. *Acer negundo*	20	☑	FAC
2. *Quercus palustris*	15	☑	FACW
3. *Celtis occidentalis*	5	☐	FAC
4. *Rosa multiflora*	5	☐	FACU
5.	0	☐	
6.	0	☐	
7.	0	☐	
	45	= Total Cover	

Herb Stratum (Plot size: 5ft)			
1. *Phalaris arundinacea*	5	☑	FACW
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	5	= Total Cover	

Woody Vine Stratum (Plot size: 30ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	50	x 2 =	100	
FAC species	40	x 3 =	120	
FACU species	5	x 4 =	20	
UPL species	0	x 5 =	0	
Column Totals:	95	(A)	240	(B)

Prevalence Index = B/A = 2.526

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the wetland area. Photographs are located in Appendix D.

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

Wetland RLP-18b

Soil

Sampling Point: **w-aeh-20200107-09b**

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	3/1	100						Silty Clay Loam	
6-18	10YR	3/1	95	10YR	7/8	5	C	M	Silty 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Redox dark surface was met for this wetland area.

Based on our site investigations, AECOM identified that the wetland meet all three criteria and classifed this area as a wetland. The wetland is represented by PFO and PEM wetland components.

Wetland RLP-19a

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-aeh-20200107-10a

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.091581 | Long.: -80.602339 | Datum: WGS 84

Soil Map Unit Name: RuB-Rittman-Urban land complex, 2 to 6 percent slopes | NWI classification: NA

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, et

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: (Explain alternative procedures here or in a separate report.)

Wetland is located west of an existing roadway and surrounded by commerical and residential lots. It occurs in a flat area on the east side of Lamar Ave. This data point is for the PSS portion of the PSS/PFO wetland complex. The wetland boundary was determined by the preponderance of Populus deltoides saplings

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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [x] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [x] 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)
- [x] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [x] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes ( )	No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):	Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

Wetland receives hydrology from precipitation and runoff from the roadway.

Wetland RLP-19a

VEGETATION - Use scientific names of plant

Sampling Point: **w-aeh-20200107-10a**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	5	☑	FAC
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	5	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15ft)			
1. *Populus deltoides*	40	☑	FAC
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	40	= Total Cover	

Herb Stratum (Plot size: 5ft)			
1. *Phalaris arundinacea*	80	☑	FACW
2. *Carex vulpinoidea*	10	☐	OBL
3. *Solidago canadensis*	5	☐	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	95	= Total Cover	

Woody Vine Stratum (Plot size: 30ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	10	x 1 =	10	
FACW species	80	x 2 =	160	
FAC species	45	x 3 =	135	
FACU species	5	x 4 =	20	
UPL species	0	x 5 =	0	
Column Totals:	140	(A)	325	(B)

Prevalence Index = B/A = 2.321

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the wetland area. Photographs available in Appendix D.

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

Wetland RLP-19a
Soil

Sampling Point: **w-aeh-20200107-10a**

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	10YR	4/1	85	10YR	5/6	10	C	M	Silty Clay Loam	
				10YR	2/1	5	D	M		
5-18	10YR	5/1	85	10YR	5/6	15	C	M	Silty 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Depleted matrix was met for this wetland area.

Based on our site investigations, AECOM identified that the wetland meet all three criteria and classifed this area as a wetland. The wetland is represented by PFO and PSS wetland components.

Wetland RLP-19b

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning River | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-aeh-20200107-10b

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.092279 | Long.: -80.602367 | Datum: WGS 84

Soil Map Unit Name: JuB-Jimtown loam, till substratum, 2 to 6 percent slopes | NWI classification: PSS1C

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, et

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: (Explain alternative procedures here or in a separate report.)

Wetland is located west of an existing roadway and surrounded by commerical and residential lots. It occurs in a flat area on the east side of Lamar Ave. This data point is for the PFO portion of the PSS/PFO wetland complex. The wetland boundary was determined by the preponderance of larger Quercus palustris and Populus balsamifera, and smaller Populus balsamifera

Hydrology

Wetland Hydrology Indicators:

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

- [x] 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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [x] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [ ] 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)
- [x] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [x] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes (●)	No ( )	Depth (inches): 0.25	
Water Table Present?	Yes ( )	No (●)	Depth (inches): 14	
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches): 12	Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

Wetland receives hydrology from precipitation and runoff from the roadway.

Wetland RLP-19b

VEGETATION - Use scientific names of plant

Sampling Point: **w-aeh-20200107-10b**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus palustris*	40	☑	FACW
2. *Populus balsamifera*	25	☑	FACW
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft)			
1. *Rhamnus cathartica*	40	☑	FAC
2. *Populus balsamifera*	15	☑	FACW
3. *Quercus palustris*	10	☐	FACW
4. *Rosa multiflora*	5	☐	FACU
5.	0	☐	
6.	0	☐	
7.	0	☐	
	70	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. *Juncus tenuis*	5	☑	FAC
2. *Rosa multiflora*	5	☑	FACU
3. *Solidago canadensis*	5	☑	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 71.4% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	90	x 2 =	180	
FAC species	45	x 3 =	135	
FACU species	15	x 4 =	60	
UPL species	0	x 5 =	0	
Column Totals:	150	(A)	375	(B)

Prevalence Index = B/A = 2.500

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☑ Dominance Test is > 50%
- ☑ Prevalence Index is ≤3.0 [1]
- ☐ Morphological Adaptations [1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation [1] (Explain)

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

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the wetland area. Photographs available in Appendix D.

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

Sampling Point: **w-aeh-20200107-10b**

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
0-8	10YR	3/3	100						Sandy Clay Loam	
8-18	10YR	5/2	80	10YR	5/8	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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Depleted matrix was met for this wetland area.

Based on our site investigations, AECOM identified that the wetland meet all three criteria and classifed this area as a wetland. The wetland is represented by PFO and PSS wetland components.

Wetland RLP-20

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-aeh-20200107-02

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.090939 | Long.: -80.608800 | Datum: WGS 84

Soil Map Unit Name: RuB-Rittman-Urban land complex, 2 to 6 percent slopes | NWI classification: PFO1/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, et

Hydrophytic Vegetation Present?	Yes (●) No ( )	Is the Sampled Area within a Wetland? Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks: (Explain alternative procedures here or in a separate report.)

PFO wetland was within a low area north of McCartney Rd (US Route 422) and west of commerical buildings. The wetland extends north into a PUB and a PFO complex outside of the survey area. The wetland boundary was determined by the preponderance of Quercus palustris.

Hydrology

Wetland Hydrology Indicators:

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

- [ ] Surface Water (A1)
- [x] High Water Table (A2)
- [x] 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)
- [x] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [ ] 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)
- [x] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [x] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( ) No (●)	Depth (inches):	
Water Table Present?	Yes (●) No ( )	Depth (inches):	3
Saturation Present? (includes capillary fringe)	Yes (●) No ( )	Depth (inches):	0

Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

PUB portion of the wetland is estimated to be about 6 inches to a foot deep.

Wetland RLP-20

VEGETATION - Use scientific names of plant

Sampling Point: **w-aeh-20200107-02**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus palustris*	70	☑	FACW
2. *Acer rubrum*	5	☐	FAC
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft)			
1. *Quercus palustris*	5	☑	FACW
2. *Acer rubrum*	5	☑	FAC
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	10	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. *Cyperus esculentus*	2	☐	FACW
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	2	= Total Cover	
Woody Vine Stratum (Plot size: 30ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	77	x 2 =	154	
FAC species	10	x 3 =	30	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	87	(A)	184	(B)

Prevalence Index = B/A = 2.115

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the wetland area. Photographs available in Appendix D.

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

Soil

Sampling Point: **w-aeh-20200107-02**

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
0-7	10YR	3/1	90	10YR	5/8	10	C	M	Silty Clay Loam	
7-18	10YR	6/1	65	10YR	3/1	25	D	M	Silty Clay Loam	
				10YR	6/8	10	C	M		

[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)
- ☑ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Depleted matrix and depleted below dark surface were both met within this wetland area.

Based on our site investigations, AECOM identified that the wetland complex meet all three criteria and classifed this area as a wetland. The wetland complex is represented by both PFO and PUB wetland components. The boundary of this entire weltnad compled continues outside of the survey area.

Wetland RLP-21a

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-aeh-20200107-03a

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.090960 | Long.: -80.609747 | Datum: WGS 84

Soil Map Unit Name: Sb-Sebring silt loam, 0 to 2 percent slopes | NWI classification: NA

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, et

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: (Explain alternative procedures here or in a separate report.)

The wetland is located within a lowspot on the northeast corner of the Keystone St/McCartney Rd intersection. This data point is for the PEM portion of a PEM/PFO wetland complex. The wetland boundary was determined by the preponderance of hydrophytic herbaceous vegetation including: Onoclea sensibilis, Poa palustris, and Carex vulpinoidea.

Hydrology

Wetland Hydrology Indicators:

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

- [x] Surface Water (A1)
- [x] High Water Table (A2)
- [x] 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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [ ] 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)
- [x] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [x] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes (●)	No ( )	Depth (inches): 1	
Water Table Present?	Yes (●)	No ( )	Depth (inches): 2	
Saturation Present? (includes capillary fringe)	Yes (●)	No ( )	Depth (inches): 0	Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

The wetland area is located in a lowspot that receives water from precipitation and runoff from the surrounding commerical and roadways.

Wetland RLP-21a

VEGETATION - Use scientific names of plant

Sampling Point: **w-aeh-20200107-03a**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	5	☑	FACW
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	5	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	

Herb Stratum (Plot size: 5ft)			
1. *Onoclea sensibilis*	35	☑	FACW
2. *Poa palustris*	25	☑	FACW
3. *Carex vulpinoidea*	20	☑	OBL
4. *Typha angustifolia*	5	☐	OBL
5. *Scirpus atrovirens*	2	☐	OBL
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	87	= Total Cover	

Woody Vine Stratum (Plot size: 30ft)		
1.	0	☐
2.	0	☐
3.	0	☐
4.	0	☐
	0	= Total Cover

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	27	x 1 =	27	
FACW species	65	x 2 =	130	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	92	(A)	157	(B)

Prevalence Index = B/A = 1.707

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the wetland area. Photographs are available in Appendix D.

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

Wetland RLP-21a

Soil

Sampling Point: **w-aeh-20200107-03a**

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	5B	5/1	100						Silty Clay	
2-18	5B	5/1	80	7.5YR	5/8	20	C	M	Silty 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☑ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Loamy gleyed matrix was met within this wetland area.

Based on our site investigations, AECOM identified that the wetland complex meet all three criteria and classifed this area as a wetland. The wetland complex is represented by both PFO and PEM wetland components and is directly and indirectly hydrologically connected to an adjacent PFO/PUB wetland complex.

Wetland RLP-21b

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-aeh-20200107-03b

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.090875 | Long.: -80.610051 | Datum: WGS 84

Soil Map Unit Name: RuB-Rittman-Urban land complex, 2 to 6 percent slopes | NWI classification: NA

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, et

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: (Explain alternative procedures here or in a separate report.)

The wetland is located within a lowspot on the northeast corner of the Keystone St/McCartney Rd intersection. This data point is for the PFO portion of a PEM/PFO wetland complex. The wetland boundary was determined by the preponderance of larger Fraxinus pennsylvanica and herbaceous Onoclea sensibilis.

Hydrology

Wetland Hydrology Indicators:

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

- [x] Surface Water (A1)
- [x] High Water Table (A2)
- [x] 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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [x] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [x] 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)
- [x] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [x] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes (●)	No ( )	Depth (inches): 1	
Water Table Present?	Yes (●)	No ( )	Depth (inches): 6	
Saturation Present? (includes capillary fringe)	Yes (●)	No ( )	Depth (inches): 0	Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

The wetland area is located in a lowspot that receives water from precipitation and runoff from the surrounding commerical and roadways.

Wetland RLP-21b

VEGETATION - Use scientific names of plant

Sampling Point: **w-aeh-20200107-03b**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	35	☑	FACW
2. *Quercus palustris*	10	☑	FACW
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	45	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. *Onoclea sensibilis*	20	☑	FACW
2. *Typha angustifolia*	15	☑	OBL
3. *Poa paludigena*	10	☐	OBL
4. *Verbesina alternifolia*	10	☐	FACW
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	55	= Total Cover	
Woody Vine Stratum (Plot size: 30ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	25	**x 1 =**	25	
FACW species	75	**x 2 =**	150	
FAC species	0	**x 3 =**	0	
FACU species	0	**x 4 =**	0	
UPL species	0	**x 5 =**	0	
Column Totals:	100	**(A)**	175	**(B)**

Prevalence Index = B/A = 1.750

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the wetland area. Photographs are located in Appendix D.

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

Wetland RLP-21b

Soil

Sampling Point: **w-aeh-20200107-03b**

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
0-18	10YR	6/1	95	7.5YR	6/8	5	C	M	Silty 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Depleted matrix was met for this wetland area.

Based on our site investigations, AECOM identified that the wetland complex meet all three criteria and classifed this area as a wetland. The wetland complex is represented by both PFO and PEM wetland components and is directly and indirectly hydrologically connected to an adjacent PFO/PUB wetland complex.

Wetland RLP-22

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-aeh-20200107-04

Investigator(s): AEH, SKM | Section, Township, Range: S. NA T. 2N R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.090251 | Long.: -80.610723 | Datum: WGS 84

Soil Map Unit Name: RuB-Rittman-Urban land complex, 2 to 6 percent slopes | NWI classification: NA

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, et

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: (Explain alternative procedures here or in a separate report.)

The wetland is located within a low area located south of McCartney Rd and west of Lettie St. and a commerical lot. The wetland is a PEM wetland with a small ephemeral stream (hh-aeh-20200107-01) draining into it from the north and an intermittent stream (hh-aeh-20200107-02) draining into the wetland from the south. The wetland boundary was determined by the preponderance of hydrophytic herbaceous vegetation including: Phalaris arundinacea and Reynoutria japonica.

Hydrology

Wetland Hydrology Indicators:

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

- [x] Surface Water (A1)
- [x] High Water Table (A2)
- [x] 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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [x] 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)
- [x] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [x] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes (●)	No ( )	Depth (inches): 0.5	
Water Table Present?	Yes (●)	No ( )	Depth (inches): 6	
Saturation Present? (includes capillary fringe)	Yes (●)	No ( )	Depth (inches): 0	Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

The wetland receives hydrology from precipitation, runoff from surrounding commerical properties and two ephemeral streams.

Wetland RLP-22

VEGETATION - Use scientific names of plant

Sampling Point: **w-aeh-20200107-04**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. *Phalaris arundinacea*	40	☑	FACW
2. *Reynoutria japonica*	30	☑	FACU
3. *Onoclea sensibilis*	5	☐	FACW
4. *Poa palustris*	5	☐	FACW
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	80	= Total Cover	
Woody Vine Stratum (Plot size: 30ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	50	**x 2 =**	100	
FAC species	0	**x 3 =**	0	
FACU species	30	**x 4 =**	120	
UPL species	0	**x 5 =**	0	
Column Totals:	80	**(A)**	220	**(B)**

Prevalence Index = B/A = 2.750

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the wetland area. Photographs are located in Appendix D.

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

Sampling Point: **w-aeh-20200107-04**

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
0-18	5B	5/1	98	10YR	5/4	2	C	M	Silty Clay Loam	5% gravel

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☑ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Loamy gleyed matrix was met for this wetland area.

Based on our site investigations, AECOM identified that the wetland meet all three criteria and classifed this area as a wetland. The wetland is represented by PEM wetland components.

Wetland RLP-23

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-aeh-20200107-05

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.082504 | Long.: -80.610718 | Datum: WGS 84

Soil Map Unit Name: CoC-Chili-Urban land complex, rolling | NWI classification: NA

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, et

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: (Explain alternative procedures here or in a separate report.)

This PEM wetland is located along the floodplain of an intermittent stream (hh-aeh-20200107-05). The wetland is surrounded by residential areas. The wetland boundary was determined by the preponderance of hydrophytic herbaceous vegetation including: Carex vulpinoidea and Phalaris arundinacea.

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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [x] 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)
- [x] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [x] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes ( )	No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):	Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

The wetland receives water from precipitation and the intermittent stream running through the wetland.

Wetland RLP-23

VEGETATION - Use scientific names of plant

Sampling Point: **w-aeh-20200107-05**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft)			
1. *Rosa multiflora*	5	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	5	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. *Carex vulpinoidea*	35	☑	OBL
2. *Phalaris arundinacea*	20	☑	FACW
3. *Juncus effusus*	5	☐	OBL
4. *Rumex crispus*	2	☐	FAC
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	62	= Total Cover	
Woody Vine Stratum (Plot size: 30ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40	x 1 =	40
FACW species	20	x 2 =	40
FAC species	2	x 3 =	6
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	67 (A)		106 (B)

Prevalence Index = B/A = 1.582

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the wetland area. Photographs are located in Appendix D.

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

Wetland RLP-23
Soil

Sampling Point: **w-aeh-20200107-05**

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
0-18	5B	4/1	95	10YR	5/6	5	C	M	Silty 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☑ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Loamy gleyed matrix was met for this wetland area.

Based on our site investigations, AECOM identified that the wetland meet all three criteria and classifed this area as a wetland. The wetland is represented by PEM wetland components.

Wetland RLP-24

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: upl-aeh-20200107-06

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.090846 | Long.: -80.609803 | Datum: WGS 84

Soil Map Unit Name: RuB-Rittman-Urban land complex, 2 to 6 percent slopes | NWI classification: NA

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, et

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: (Explain alternative procedures here or in a separate report.)

Upland was taken southeast of the existing wetland.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

No wetland hydrology was present.

Wetland RLP-24

VEGETATION - Use scientific names of plant

Sampling Point: **upl-aeh-20200107-06**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus rubra*	5	☑	FAC
2. *Acer rubrum*	5	☑	FAC
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft)			
1. *Rosa multiflora*	25	☑	FACU
2. *Acer rubrum*	15	☑	FAC
3. *Ulmus rubra*	5	☐	FAC
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	45	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. *Solidago canadensis*	15	☑	FACU
2. *Glechoma hederacea*	15	☑	FACU
3. *Poa pratensis*	10	☑	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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: 7 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 42.9% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	**x 1 =**	0	
FACW species	0	**x 2 =**	0	
FAC species	30	**x 3 =**	90	
FACU species	65	**x 4 =**	260	
UPL species	0	**x 5 =**	0	
Column Totals:	95	**(A)**	350	**(B)**

Prevalence Index = B/A = 3.684

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the upland area.

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

Soil

Sampling Point: **upl-aeh-20200107-06**

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
0-18	10YR 4/2	100					Silty 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 soils were met within the upland area.

Wetland RLP-25

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-aeh-20200107-07

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.081422 | Long.: -80.611463 | Datum: WGS 84

Soil Map Unit Name: CoC - Chili-Urban land complex, rolling | NWI classification: NA

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, et

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: (Explain alternative procedures here or in a separate report.)

This PEM wetland is located along the floodplain of an intermittent stream (hh-aeh-20200107-05). The wetland is surrounded by residential areas and is adjacent to an old parking pad that is no longer in use. The wetland boundary was determined by the preponderance of hydrophytic herbaceous vegetation including: Typha angustifolia and Carex vulpinoidea.

Hydrology

Wetland Hydrology Indicators:

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

- [ ] Surface Water (A1)
- [x] High Water Table (A2)
- [x] 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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [ ] 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)
- [x] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [x] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes (●)	No ( )	Depth (inches): 4	
Saturation Present? (includes capillary fringe)	Yes (●)	No ( )	Depth (inches): 1	Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

The wetland receives water from precipitation and the intermittent stream running through the wetland.

Wetland RLP-25

VEGETATION - Use scientific names of plant

Sampling Point: **w-aeh-20200107-07**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. *Typha angustifolia*	25	☑	OBL
2. *Carex vulpinoidea*	20	☑	OBL
3. *Symphyotrichum ericoides*	15	☑	FACU
4. *Elymus riparius*	15	☑	FACW
5. *Juncus effusus*	10	☐	OBL
6. *Daucus carota*	5	☐	UPL
7. *Rumex crispus*	5	☐	FAC
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	95	= Total Cover	
Woody Vine Stratum (Plot size: 30ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	55	**x 1 =**	55	
FACW species	15	**x 2 =**	30	
FAC species	5	**x 3 =**	15	
FACU species	15	**x 4 =**	60	
UPL species	5	**x 5 =**	25	
Column Totals:	95	**(A)**	185	**(B)**

Prevalence Index = B/A = 1.947

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the wetland area. Photographs are located in Appendix D.

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

Soil

Sampling Point: **w-aeh-20200107-07**

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc [2]	Texture	Remarks
0-12	10YR 3/1	95	10YR 5/6	5	C	M	Silty 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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: concrete

Depth (inches): 12

Hydric Soil Present? **Yes** ○ **No** ◉

Remarks:

Redox dark surface was met for this wetland area.

Based on our site investigations, AECOM identified that the wetland meet all three criteria and classifed this area as a wetland. The wetland is represented by PEM wetland components.

Wetland RLP-26

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, , a First Energy Company | State: OH | Sampling Point: w-aeh-20200107-08

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.081544 | Long.: -80.613102 | Datum: WGS 84

Soil Map Unit Name: Ua-Udorthents, loamy, 2 to 25 percent slopes | NWI classification: NA

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, et

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: (Explain alternative procedures here or in a separate report.)

This PEM wetland is located within a lowspot adjacent to a parking pad and the roadway. The wetland is disturbed from the parking pad. The wetland boundary was determined by the preponderance of hydrophytic herbaceous vegetation including: Typha angustifolia and Phragmites australis.

Hydrology

Wetland Hydrology Indicators:

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

- [ ] Surface Water (A1)
- [x] High Water Table (A2)
- [x] 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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [ ] 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)
- [x] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [x] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes (●)	No ( )	Depth (inches): 4	
Saturation Present? (includes capillary fringe)	Yes (●)	No ( )	Depth (inches): 2	Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

The wetland received water from preciptiation and runoff from the surrounding areas.

Wetland RLP-26

VEGETATION - Use scientific names of plant

Sampling Point: **w-aeh-20200107-08**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. *Typha angustifolia*	70	☑	OBL
2. *Phragmites australis*	20	☐	FACW
3. *Phalaris arundinacea*	15	☐	FACW
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	105	= Total Cover	
Woody Vine Stratum (Plot size: 30ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	70	**x 1 =**	70
FACW species	35	**x 2 =**	70
FAC species	0	**x 3 =**	0
FACU species	0	**x 4 =**	0
UPL species	0	**x 5 =**	0
Column Totals:	105 **(A)**		140 **(B)**

Prevalence Index = B/A = 1.333

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the wetland area. Photographs are located in Appendix D.

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

Soil

Sampling Point: **w-aeh-20200107-08**

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc [2]	Texture	Remarks
0-4	10YR 4/1	95	10YR 5/6	5	C	M	Silty Clay Loam	50% fill

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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: gravel/concrete

Depth (inches): 4

Hydric Soil Present? **Yes** ○ **No** ◉

Remarks:

Depleted matrix was met for this wetland area. Refusal occurred at 4 inches due to the surrounding parking pad.

Based on our site investigations, AECOM identified that the wetland meet all three criteria and classifed this area as a wetland. The wetland is represented by PEM wetland components.

Wetland RLP-27

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, , a FirstEnergy Company | State: OH | Sampling Point: w-aeh-20200107-01

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 2W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.088615 | Long.: -80.638187 | Datum: WGS 84

Soil Map Unit Name: Ua-Udorthents, loamy, 2 to 25 percent slopes | NWI classification: NA

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, et

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: (Explain alternative procedures here or in a separate report.)

Wetland was within a lowland present on top of a disturbed mound. The wetland was considered a PEM with Populus deltoides along the edge of the wetland. Cyperus esculentus dominates the herbaceous layer within this PEM wetland.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes ( )	No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):	Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

Geomorphic position was present as the wetland was located within a low swale. The wetland receives water from rainfall.

Wetland RLP-27

VEGETATION - Use scientific names of plant

Sampling Point: **w-aeh-20200107-01**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	5	☑	FAC
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	5	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	

Herb Stratum (Plot size: 5ft)			
1. *Cyperus esculentus*	20	☑	FACW
2. *Symphyotrichum ericoides*	5	☑	FACU
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	25	= Total Cover	

Woody Vine Stratum (Plot size: 30ft)		
1.	0	☐
2.	0	☐
3.	0	☐
4.	0	☐
	0	= Total Cover

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	20	x 2 =	40	
FAC species	5	x 3 =	15	
FACU species	5	x 4 =	20	
UPL species	0	x 5 =	0	
Column Totals:	30	(A)	75	(B)

Prevalence Index = B/A = 2.500

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☑ Dominance Test is > 50%
- ☑ Prevalence Index is ≤3.0 [1]
- ☐ Morphological Adaptations [1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation [1] (Explain)

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

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the wetland area. Photographs are located in Appendix D.

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

Sampling Point: **w-aeh-20200107-01**

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
0-3	10YR	3/1	100						Silty Clay Loam	50% gravel
3-18	10YR	6/1	85	10YR	5/6	15	C	M	Silty Clay Loam	50% gravel

[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)
- ☑ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

The soil profile indicated the presence of depleted matrix and depleted below a dark surface. The soil was disturbed with gravel.

Based on site investigations, AECOM identified that the wetland meet all three criteria and classifed this area as a wetland. The wetland is a PEM and is indirectly hydrologically connected to the Mahoning River.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project **City/County:** Mahoning **Sampling Date:** 20-Aug-20

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland RLP-28**

Investigator(s): M.R.Kline, L.H.Jacks **Section, Township, Range: S.** **T.** 2N **R.** 1W

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** concave **Slope:** 1.7 % / 1.0 °

Subregion (LRR or MLRA): LRR R **Lat.:** 41.100878 **Long.:** -80.594211 **Datum:** WGS84

Soil Map Unit Name: JtB; Jimtown loam, 2 to 6 percent slopes **NWI classification:** NA

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

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

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

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?**	Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○		
Wetland Hydrology Present?	Yes ◉ No ○		

Remarks: (Explain alternative procedures here or in a separate report.)

PFO wetland located in a depression within a forested area. Surface runoff is draining to the depression which is seasonally saturated or inundated. Current conditions are dry but water stained leaves were observed within the depression. The wetland boundary follows edge of depression and hydrophytic vegetation dominated by Acer rubrum. Field identification number is W-200820-MRK-001 PFO.

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)
- ☑ Sparsely Vegetated Concave Surface (B8)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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):	0
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

NA

Remarks:

The source of hydrology is surface runoff collecting within the forested depression.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland RLP-28

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	50	☑	FAC
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	50	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Acer rubrum*	25	☑	FAC
2. *Lindera benzoin*	10	☑	FACW
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	35	**= Total Cover**	
Herb Stratum (Plot size: 5' radius)			
1. *Glyceria striata*	10	☑	OBL
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	10	**= Total Cover**	
Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

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

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

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	10	x 1 =	10
FACW species	10	x 2 =	20
FAC species	75	x 3 =	225
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	95 (A)		255 (B)

Prevalence Index = B/A = 2.684

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.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ◉ No ○

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

Herbaceous vegetation is sparse within the concave surface. Photographs of the wetland habitat are located in Appendix D.

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

Soil

Sampling Point: Wetland RLP-28

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	80	10YR	5/6	20	C	M,PL	Silt Loam	10% oxidized rhizospheres
4-14	2.5Y	7/2	80	10YR	5/6	20	C	M	Silt 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Based on site investigations, AECOM identified that the forested depression meet all three criteria for a wetland and classified the area as a forested wetland.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project **City/County:** Mahoning **Sampling Date:** 06-Oct-20

Applicant/Owner: ATSI, , a FirstEnergy Company **State:** Ohio **Sampling Point:** **Wetland RLP-29a**

Investigator(s): Brian Miller **Section, Township, Range: S.** **T.** 2N **R.** 1W

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

Subregion (LRR or MLRA): LRR R **Lat.:** 41.096392 **Long.:** -80.611935 **Datum:** NAD83

Soil Map Unit Name: Chargin Loam - Ck **NWI classification:** N/A

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

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

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

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?**	Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○		
Wetland Hydrology Present?	Yes ◉ No ○		

Remarks: (Explain alternative procedures here or in a separate report.)

A PEM portion of a PEM/PSS wetland complex located along the edge of a large perennial stream. The wetland receives backwater flow as the main source hydrology. The boundary of the PEM wetland was identified by the dominance of Scirpus cyperinus and Leersia oryzoides. The field identification point for the wetland is W-2020-10-06-BJM-001 PEM

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☑ 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):	0	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	0	**Wetland Hydrology Present?** Yes ◉ No ○

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

Remarks:

The source of hydrology is from precipitation and overflow of the abutting perennial.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland RLP-29a

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Herb Stratum (Plot size: 5ft radius)			
1. *Typha latifolia*	5	☐	OBL
2. *Leersia oryzoides*	25	☑	OBL
3. *Scirpus atrovirens*	45	☑	OBL
4. *Phalaris arundinacea*	10	☐	FACW
5. *Persicaria maculosa*	15	☐	FAC
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	75	x 1 =	75
FACW species	10	x 2 =	20
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		140 (B)

Prevalence Index = B/A = 1.400

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.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ◉ No ○

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

See Appendix D for photographs of the wetland habitat.

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

Soil

Sampling Point: Wetland RLP-29a

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	5/2	80	7.5R	3/4	10	C	M	Loam	
+mottle				10YR	2/1	10	D	M	Loam	
4-18	10YR	4/1	95	10YR	5/4	5	C	M	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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Due to the presence of wetland hydrology, dominance of hydrophytic vegetation, and hydric soils, the area was identified as a wetland.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project **City/County:** Mahoning **Sampling Date:** 06-Oct-20

Applicant/Owner: ATSI, , a FirstEnergy Company **State:** Ohio **Sampling Point:** **Wetland RLP-29b**

Investigator(s): Brian Miller **Section, Township, Range: S.** **T.** 2N **R.** 1W

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

Subregion (LRR or MLRA): LRR R **Lat.:** 41.096568 **Long.:** -80.611515 **Datum:** NAD83

Soil Map Unit Name: Chargin Loam - Ck **NWI classification:** N/A

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

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

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

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?**	Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○		
Wetland Hydrology Present?	Yes ◉ No ○		

Remarks: (Explain alternative procedures here or in a separate report.)

A PSS portion of a PEM/PSS wetland complex located along the edge of a large perennial stream. The wetland receives backwater flow as the main source hydrology. The boundary of the PSS wetland was identified by the dominance of Scirpus cyperinus and Spirea tomentosa. The field identification point for the wetland is W-2020-10-06-BJM-001 PSS.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☑ 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):	0	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	0	**Wetland Hydrology Present?** Yes ◉ No ○

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

Remarks:

The source of hydrology is from precipitation and backwater flow from the perennial stream.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland RLP-29b

Tree Stratum (Plot size: 330 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	10	☑	FAC
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft radius)			
1. *Spiraea tomentosa*	20	☑	FACW
2. *Lonicera morrowii*	15	☑	FACU
3. *Lindera benzoin*	5	☐	FACW
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	40	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. *Scirpus cyperinus*	45	☑	OBL
2. *Lysimachia nummularia*	15	☑	FACW
3. *Dichanthelium clandestinum*	10	☐	FACW
4. *Ageratina altissima*	5	☐	FACU
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	75	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	45	x 1 =	45
FACW species	50	x 2 =	100
FAC species	10	x 3 =	30
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	125 (A)		255 (B)

Prevalence Index = B/A = 2.040

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.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ◉ No ○

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

See Appendix D for photographs of the wetland habitat.

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

Soil

Sampling Point: Wetland RLP-29b

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	4/1	90	10YR	4/6	10	C	M	Loam	
6-18	N	4/1	85	7.5YR	5/6	15	C	M	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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Due to the presence of wetland hydrology, dominance of hydrophytic vegetation, and hydric soils, the area along the perennial stream was identified as a wetland.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project **City/County:** Mahoning **Sampling Date:** 06-Oct-20

Applicant/Owner: ATSI, , a FirstEnergy Company **State:** Ohio **Sampling Point:** **Wetland RLP-30**

Investigator(s): Brian Miller **Section, Township, Range: S.** **T.** 2N **R.** 1W

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

Subregion (LRR or MLRA): LRR R **Lat.:** 41.095290 **Long.:** -80.612739 **Datum:** NAD83

Soil Map Unit Name: Chargin Loam - Ck **NWI classification:** R4SBC

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

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

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

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?**	Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○		
Wetland Hydrology Present?	Yes ◉ No ○		

Remarks: (Explain alternative procedures here or in a separate report.)

A PEM wetland located along the edge of a large perennial stream and on an old timber road. The wetland receives backwater flow as the main source hydrology from Stream RLP-13. The boundary of the PEM wetland was identified by the dominance of Leersia oryzoides. The field identification point assocated with the wetland is W-2020-10-06-BJM-002 PEM.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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):	0
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

N/A

Remarks:

The source of hydrology is from precipitation and overflow from the abutting stream.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland RLP-30

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Herb Stratum (Plot size: 5ft radius)			
1. *Leersia oryzoides*	65	☑	OBL
2. *Cinna arundinacea*	10	☐	FACW
3. *Urtica dioica*	10	☐	FAC
4. *Epilobium coloratum*	5	☐	OBL
5. *Persicaria virginiana*	5	☐	FAC
6. *Impatiens capensis*	5	☐	FACW
7. *Tussilago farfara*	5	☐	FACU
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	105	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	70	x 1 =	70
FACW species	15	x 2 =	30
FAC species	15	x 3 =	45
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	105 (A)		165 (B)

Prevalence Index = B/A = 1.571

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.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ◉ No ○

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

See Appendix D for photographs of the wetland habitat.

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

Soil

Sampling Point: Wetland RLP-30

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	2/1	75	10YR	4/6	15	C	M	Loam	
				10YR	4/1	10	D	M		
2-18	10YR	5/1	95	10YR	5/6	5	C	M	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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Due to the presence of wetland hydrology, dominance of hydrophytic vegetation, and hydric soils, the area along the stream as identified as a wetland.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project **City/County:** Mahoning **Sampling Date:** 06-Oct-20

Applicant/Owner: ATSI, , a FirstEnergy Company **State:** Ohio **Sampling Point:** **Wetland RLP-31**

Investigator(s): Brian Miller **Section, Township, Range: S.** **T.** 2N **R.** 1W

Landform (hillslope, terrace, etc.): Valley **Local relief (concave, convex, none):** concave **Slope:** 2.0 % / 1.1 °

Subregion (LRR or MLRA): LRR R **Lat.:** 41.094743 **Long.:** -80.612947 **Datum:** NAD83

Soil Map Unit Name: Dekalb very stony loam, 25 to 50 percent slopes - DkF **NWI classification:** N/A

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

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

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

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?**	Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○		
Wetland Hydrology Present?	Yes ◉ No ○		

Remarks: (Explain alternative procedures here or in a separate report.)

A PEM wetland located along the edge of a large perennial stream and on an old timber road. The wetland receives backwater flow as the main source hydrology from Stream RLP-29 and direct input from Stream RLP-11. The boundary of the PEM wetland was identified by the dominance of Scirpus atorvirens. The field identificaiton of the sample point was W-2020-10-06-BJM-003 PEM.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☑ 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): 0	**Wetland Hydrology Present?** Yes ◉ No ○
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches): 0	

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

N/A

Remarks:

The source of hydrology is from precipitation and overflow from the abutting streams.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland RLP-31

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Platanus occidentalis*	5	☑	FACW
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	5	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft radius)			
1. *Rosa multiflora*	5	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	5	= Total Cover	
Herb Stratum (Plot size: 5ft radius)			
1. *Scirpus atrovirens*	45	☑	OBL
2. *Epilobium coloratum*	15	☑	OBL
3. *Dichanthelium clandestinum*	10	☐	FACW
4. *Leersia virginica*	10	☐	FACW
5. *Solidago gigantea*	5	☐	FACW
6. *Rumex crispus*	5	☐	FAC
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	90	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	60	x 1 =	60
FACW species	30	x 2 =	60
FAC species	5	x 3 =	15
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	100 (A)		155 (B)

Prevalence Index = B/A = 1.550

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.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ◉ No ○

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

See Appendix D for photographs of the wetland habitat.

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

Soil

Sampling Point: Wetland RLP-31

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	4/2	95	10YR	5/4	5	C	M	Loam	
7-16	10YR	4/1	90	10YR	4/6	10	C	M	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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Due to the presence of wetland hydrology, dominance of hydrophytic vegetation, and hydric soils, the area was identified as a wetland.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project **City/County:** Mahoning **Sampling Date:** 06-Oct-20

Applicant/Owner: ATSI, , a FirstEnergy Company **State:** Ohio **Sampling Point:** **Wetland RLP-32**

Investigator(s): Brian Miller **Section, Township, Range: S.** **T.** 2N **R.** 1W

Landform (hillslope, terrace, etc.): Valley **Local relief (concave, convex, none):** concave **Slope:** 2.0 % / 1.1 °

Subregion (LRR or MLRA): LRR R **Lat.:** 41.094332 **Long.:** -80.613826 **Datum:** NAD83

Soil Map Unit Name: Chargin Loam - Ck **NWI classification:** N/A

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

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

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

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?**	Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○		
Wetland Hydrology Present?	Yes ◉ No ○		

Remarks: (Explain alternative procedures here or in a separate report.)

A PFO wetland located along the edge of a large perennial stream and downslope from a residential park area. The wetland receives backwater flow as the main source hydrology. The boundary of the PFO wetland was identified by the dominance of Acer rubra, Lindera benzoin, and Scirpus atrovirens. The field identification of the sample point was W-2020-10-06-BJM-004 PFO.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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):	0	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	0	**Wetland Hydrology Present?** Yes ◉ No ○

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

N/A

Remarks:

The source of hydrology is from precipitation and overflow from the abutting stream.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland RLP-32

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	25	☑	FAC
2. *Platanus occidentalis*	10	☑	FACW
3. *Carya ovata*	5	☐	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	40	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 15ft radius)			
1. *Lindera benzoin*	15	☑	FACW
2. *Cornus racemosa*	10	☑	FAC
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	25	**= Total Cover**	
Herb Stratum (Plot size: 5ft radius)			
1. *Scirpus atrovirens*	55	☑	OBL
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	55	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	55	x 1 =	55	
FACW species	25	x 2 =	50	
FAC species	35	x 3 =	105	
FACU species	5	x 4 =	20	
UPL species	0	x 5 =	0	
Column Totals:	120	(A)	230	(B)

Prevalence Index = B/A = 1.917

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.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ◉ No ○

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

See Appendix D for photographs of the wetland habitat.

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

Soil

Sampling Point: Wetland RLP-32

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
0-18	10YR	4/1	95	10YR	4/6	5	C	M	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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Due to the presence of wetland hydrology, dominance of hydrophytic vegetation, and hydric soils, the area was identified as a wetland.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project **City/County:** Mahoning **Sampling Date:** 17-Jun-24

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland RLP-33**

Investigator(s): MRK, TJK **Section, Township, Range: S.** **T.** 2N **R.** 2W

Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** concave **Slope:** 2.0 % / 1.1 °

Subregion (LRR or MLRA): LRR R **Lat.:** 41.091747 **Long.:** -80.616837 **Datum:** NAD83

Soil Map Unit Name: RuB: Rittman-Urban land complex, 2 to 6 percent slopes **NWI classification:** NA

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

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

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

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?**	Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○		
Wetland Hydrology Present?	Yes ◉ No ○		

Remarks: (Explain alternative procedures here or in a separate report.)

This PEM wetland is located in a depression that is part of an old rock lined ditch. Rock lining of ditch has been covered with sediment and hydrophytic vegetation now dominates the area. Area is collecting surface runoff that dissipates into the surrounding upland forest. The wetland boundary follows edge of depression.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	**Wetland Hydrology Present?** Yes ◉ No ○

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

NA

Remarks:

The source of hydrology is surface runoff.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland RLP-33

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Ulmus rubra*	5	☑	FAC
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	5	= Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. *Phragmites australis*	60	☑	FACW
2. *Carex vulpinoidea*	30	☑	OBL
3. *Scirpus atrovirens*	15	☐	OBL
4. *Euthamia graminifolia*	15	☐	FAC
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	120	= Total Cover	
Woody Vine Stratum (Plot size: 30' radius)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	45	x 1 =	45
FACW species	60	x 2 =	120
FAC species	20	x 3 =	60
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	125 (A)		225 (B)

Prevalence Index = B/A = 1.800

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.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ◉ No ○

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

Vegetation does meet hydrophytic criteria.

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

Soil

Sampling Point: Wetland RLP-33

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
0-8	10YR	3/2	90	10YR	4/6	10	C	PL	Silty Clay Loam	50% mixed rock

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Soil does meet hydric criteria. Shovel refusal occurred at 8 inches due to rock.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project **City/County:** Mahoning **Sampling Date:** 20-Sep-24

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland RLP-34**

Investigator(s): MRK **Section, Township, Range: S.** **T.** 2N **R.** 2W

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** concave **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR R **Lat.:** 41.085566 **Long.:** -80.633938 **Datum:** NAD83

Soil Map Unit Name: Ua: Udorthents, loamy, 2 to 25 percent slopes **NWI classification:** NA

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

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

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

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?**	Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○		
Wetland Hydrology Present?	Yes ◉ No ○		

Remarks: (Explain alternative procedures here or in a separate report.)

This PEM wetland is located in an isolated depression that is collecting surface runoff from the surrounding area. Area has been disturbed in the past by industry/construction with soil piles observed in scrub/shrub areas around the wetland. The wetland boundary follows edge of depression and hydrophytic vegetation dominated by Phalaris arundinacea.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	**Wetland Hydrology Present?** Yes ◉ No ○

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

NA

Remarks:

The source of hydrology is surface runoff.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland RLP-34

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Salix nigra*	2	☐	OBL
2. *Populus tremuloides*	2	☐	FACU
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	4	**= Total Cover**	
Herb Stratum (Plot size: 5' radius)			
1. *Phalaris arundinacea*	50	☑	FACW
2. *Juncus effusus*	40	☑	OBL
3. *Symphyotrichum pilosum*	15	☐	FACU
4. *Rumex crispus*	5	☐	FAC
5. *Carex lurida*	5	☐	OBL
6. *Scirpus cyperinus*	5	☐	OBL
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	120	**= Total Cover**	
Woody Vine Stratum (Plot size: 30' radius)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	52	x 1 =	52
FACW species	50	x 2 =	100
FAC species	5	x 3 =	15
FACU species	17	x 4 =	68
UPL species	0	x 5 =	0
Column Totals:	124 (A)		235 (B)

Prevalence Index = B/A = 1.895

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.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ◉ No ○

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

Vegetation does meet hydrophytic criteria.

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

Soil

Sampling Point: Wetland RLP-34

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
0-10	10YR	4/2	90	10YR	4/6	10	C	PL	Silt Loam	50% mixed rock and shale

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Soil does meet hydric criteria. Shovel refusal occurred at 10 inches due to rock. Soils are mixed with rock and shale throughout and are highly compacted from past construction.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project **City/County:** Mahoning County **Sampling Date:** 11-Mar-21

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** UPL-2021-03-11-BJM-001

Investigator(s): B. Miller and L. Zettle **Section, Township, Range: S.** **T.** 2N **R.** 2W

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

Subregion (LRR or MLRA): LRR R **Lat.:** 41.10420794 **Long.:** -80.66139285 **Datum:**

Soil Map Unit Name: Ua- Udorthents, loamy, 2 to 25 percent slopes **NWI classification:** NA

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

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

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

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

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?**	Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉		
Wetland Hydrology Present?	Yes ○ No ◉		

Remarks: (Explain alternative procedures here or in a separate report.)

Upland representative of an active floodway of the Mahoning River located downslope of the proposed substation expansion area. Due to the active floodway, the soil profile was identified as naturally problematic. However, no recent sediment deposits and/drift deposits were observed. Therefore, due to lack of hydrophytic vegetation and presence of wetland hydrology indicators, the area with the active floodwaters are not identified as meeting the criteria of a wetland.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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):	0	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	0	**Wetland Hydrology Present?** Yes ○ No ◉

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

Remarks:

No drift deposits or recent sediment deposits were observed. Therefore, only one secondary wetland hydrology indicator was identified.

VEGETATION - Use scientific names of plants

Sampling Point: UPL-2021-03-11-BJM-001

Tree Stratum (Plot size:)	**Absolute % Cover**	**Dominant Species?**	**Indicator Status**
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Herb Stratum (Plot size: 5ft radius)			
1. *Reynoutria japonica*	85	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	85	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	85	x 4 =	340
UPL species	0	x 5 =	0
Column Totals:	85 (A)		340 (B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ○ No ◉

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

Approximately 15 percent of soil's surface was bare ground.

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

Soil

Sampling Point: UPL-2021-03-11-BJM-001

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
0-13	2.5YR	3/1	100					Fine Silty Loam	
13-17	2.5YR	3/2	100					Fine Silty 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project **City/County:** Mahoning County **Sampling Date:** 11-Mar-21

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **UPL-2021-03-11-BJM-002**

Investigator(s): B. Miller and L. Zettle **Section, Township, Range: S.** **T.** 2N **R.** 2W

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

Subregion (LRR or MLRA): LRR R **Lat.:** 41.1041986 **Long.:** -80.66123021 **Datum:**

Soil Map Unit Name: Ua - Udorthents, loamy, 2 to 25 percent slopes **NWI classification:** NA

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

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

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

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

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?**	Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉		
Wetland Hydrology Present?	Yes ○ No ◉		

Remarks: (Explain alternative procedures here or in a separate report.)

Upland representative of an open maintained area adjacent to the existing Riverbend substation located within a 100-year floodplain. The soil profile displayed a gravel layer that indicates prior disturbance. However, the absence of hydrophytic vegetation and wetland hydrology indicates this area is not a wetland.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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):	0	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	0	**Wetland Hydrology Present?** Yes ○ No ◉

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

Remarks:

No primary and/or secondary wetland hydrology indicators were observed.

VEGETATION - Use scientific names of plants

Sampling Point: UPL-2021-03-11-BJM-002

Tree Stratum (Plot size:)	**Absolute % Cover**	**Dominant Species?**	**Indicator Status**
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Herb Stratum (Plot size: 5ft radius)			
1. *Poa pratensis*	90	☑	FACU
2. *Andropogon virginicus*	10	☐	FACU
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	100	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	100 (A)		400 (B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in 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: UPL-2021-03-11-BJM-002

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	7.5YR	2/2	100					Silt Loam	gravel refusal below 6inches

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

The soil profile displays a gravel layer below 6inches indicating previous disturbance.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project **City/County:** Mahoning County **Sampling Date:** 11-Mar-21

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **UPL-2021-03-11-BJM-003**

Investigator(s): B. Miller and L. Zettle **Section, Township, Range: S.** **T.** 2N **R.** 2W

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

Subregion (LRR or MLRA): LRR R **Lat.:** 41.10390777 **Long.:** -80.6612234 **Datum:**

Soil Map Unit Name: W - Water **NWI classification:** NA

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

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

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

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

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?**	Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉		
Wetland Hydrology Present?	Yes ○ No ◉		

Remarks: (Explain alternative procedures here or in a separate report.)

Upland representative of an old field adjacent to the existing Riverbend substation located within a 100-year floodplain. The soil profile displayed a gravel layer that indicates prior disturbance. However, the absence of hydrophytic vegetation and wetland hydrology indicates this area is not a wetland.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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):	0	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	0	**Wetland Hydrology Present?** Yes ○ No ◉

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

Remarks:

No primary and/or secondary wetland hydrology indicators were observed.

VEGETATION - Use scientific names of plants

Sampling Point: UPL-2021-03-11-BJM-003

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 15 ft radius)			
1. *Rubus occidentalis*	10	☑	UPL
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	10	**= Total Cover**	
Herb Stratum (Plot size: 5ft radius)			
1. *Andropogon virginicus*	55	☑	FACU
2. *Solidago altissima*	15	☑	FACU
3. *Reynoutria japonica*	15	☑	FACU
4. *Symphyotrichum lateriflorum*	15	☑	FAC
5. *Agrostis gigantea*	10	☐	FACW
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	110	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 20.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	15	x 3 =	45
FACU species	85	x 4 =	340
UPL species	10	x 5 =	50
Column Totals:	120 (A)		455 (B)

Prevalence Index = B/A = 3.792

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.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in 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: UPL-2021-03-11-BJM-003

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	7.5YR	2/2	100					Silt Loam	refusal due to rock and fill material below 4inches

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

The soil profile indicated a previous disturbance due to fill material being present below 4 inches. The fill material consisted of rock or gravel that impeded the shovel investigation.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project **City/County:** Mahoning **Sampling Date:** 20-Aug-20

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **UPL-200820-MRK-001**

Investigator(s): M.R.Kline, L.H.Jacks **Section, Township, Range: S.** **T.** 2N **R.** 2W

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** flat **Slope:** 1.7 % / 1.0 °

Subregion (LRR or MLRA): LRR R **Lat.:** 41.095956 **Long.:** -80.642382 **Datum:** WGS84

Soil Map Unit Name: Ua; Udorthents, loamy, 2 to 25 percent slopes **NWI classification:** NA

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

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

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

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

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?**	Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉		
Wetland Hydrology Present?	Yes ○ No ◉		

Remarks: (Explain alternative procedures here or in a separate report.)

Upland data point collected within proposed workspace. Site is a former industrial site and soils are comprised of fill and rubble. Site is reverting to a fallow field with tall herbaceous vegetation.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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):	0
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	0

Wetland Hydrology Present? Yes ○ No ◉

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

NA

Remarks:

No source of hydrology was observed.

VEGETATION - Use scientific names of plants

Sampling Point: UPL-200820-MRK-001

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum*	30	☑	FACW
2. *Populus grandidentata*	10	☑	FACU
3. *Acer saccharum*	10	☑	FACU
4. *Platanus occidentalis*	10	☑	FACW
5.	0	☐	
6.	0	☐	
7.	0	☐	
	60	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Acer saccharinum*	10	☑	FACW
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	10	**= Total Cover**	
Herb Stratum (Plot size: 5' radius)			
1. *Parthenocissus quinquefolia*	50	☑	FACU
2. *Ambrosia artemisiifolia*	20	☑	FACU
3. *Dactylis glomerata*	20	☑	FACU
4. *Verbascum thapsus*	20	☑	UPL
5. *Solidago canadensis*	10	☐	FACU
6. *Daucus carota*	10	☐	UPL
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	130	**= Total Cover**	
Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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: 9 (B)

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

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	50	x 2 =	100	
FAC species	0	x 3 =	0	
FACU species	120	x 4 =	480	
UPL species	30	x 5 =	150	
Column Totals:	200	(A)	730	(B)

Prevalence Index = B/A = 3.650

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.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in 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: UPL-200820-MRK-001

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
0-14	10YR	2/1	100					Silt Loam	Fill material

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Soil is comprised of fill material and rubble from the former industrial site.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 06-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-aeh-20200106-01

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 2W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.101504 | Long.: -80.657237 | Datum: WGS 84

Soil Map Unit Name: Ua - Udorthents, loamy, 2 to 25 percent slopes | NWI classification: NA

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, et

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: (Explain alternative procedures here or in a separate report.)

Upland was taken between the railroad and roadway. The upland was taken to describe the maintained areas surrounding the proposed centerline throughout the urban area.

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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [ ] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes ( )	No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):	Wetland Hydrology Present? Yes ( ) No (●)

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

Remarks:

No wetland hydrology was identified within the data point.

VEGETATION - Use scientific names of plant

Sampling Point: **upl-aeh-20200106-01**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus strobus*	45	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	45	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15ft)			
1. *Pinus strobus*	5	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	5	= Total Cover	

Herb Stratum (Plot size: 5ft)			
1. *Poa pratensis*	30	☑	FACU
2. *Oxalis corniculata*	15	☑	FACU
3. *Heracleum maximum*	5	☐	FACW
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	50	= Total Cover	

Woody Vine Stratum (Plot size: 30ft)		
1.	0	☐
2.	0	☐
3.	0	☐
4.	0	☐
	0	= Total Cover

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	**x 1 =**	0	
FACW species	5	**x 2 =**	10	
FAC species	0	**x 3 =**	0	
FACU species	95	**x 4 =**	380	
UPL species	0	**x 5 =**	0	
Column Totals:	100	**(A)**	390	**(B)**

Prevalence Index = B/A = 3.900

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

Vegetation as previoulsy disturbed by mowing activities as well as seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the upland area.

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

Soil

Sampling Point: **upl-aeh-20200106-01**

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
0-6	10YR	2/2	100						Silty 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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: Brick

Depth (inches): 6

Hydric Soil Present? **Yes** ○ **No** ◉

Remarks:

The soils were disturbed from the railroad and roadway. A restrictive layer was observed at 6 inches.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project City/County: Mahoning County Sampling Date: 06-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company State: OH Sampling Point: upl-aeh-20200106-02

Investigator(s): AEH, SKM Section, Township, Range: S. NA T. 2N R. 2W

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

Subregion (LRR or MLRA): LRR K Lat.: 41.103801 Long.: -80.660029 Datum: WGS 84

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

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, et

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

Remarks: (Explain alternative procedures here or in a separate report.)

Upland was taken in a floodplain along the Mahoning River.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

No other hydrology indicators were observed in the floodplain expect geomorphic position of being next to the stream.

VEGETATION - Use scientific names of plant

Sampling Point: **upl-aeh-20190106-02**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Platanus occidentalis*	40	☑	FACW
2. *Acer rubrum*	20	☑	FAC
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	60	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15ft)			
1. *Lonicera morrowii*	20	☑	FACU
2. *Acer rubrum*	15	☑	FAC
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	35	= Total Cover	

Herb Stratum (Plot size: 5ft)			
1. *Solidago canadensis*	7	☑	FACU
2. *Daucus carota*	5	☑	UPL
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	12	= Total Cover	

Woody Vine Stratum (Plot size: 30ft)		
1.	0	☐
2.	0	☐
3.	0	☐
4.	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: 6 (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	40	x 2 =	80	
FAC species	35	x 3 =	105	
FACU species	27	x 4 =	108	
UPL species	5	x 5 =	25	
Column Totals:	107	(A)	318	(B)

Prevalence Index = B/A = 2.972

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the upland area.

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

Sampling Point: **upl-aeh-20190106-02**

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
0-18	10YR	3/2	100						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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Soils seemed to be well drained to the stream.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 06-Jan-20

Applicant/Owner: ATSI, a First Energy Company | State: OH | Sampling Point: upl-aeh-20200106-03

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 2W

Landform (hillslope, terrace, etc.): Flat | Local relief (concave, convex, none): none | Slope: 1.0 % / 0.0 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.104174 | Long.: -80.659393 | Datum: WGS 84

Soil Map Unit Name: Ua - Udorthents, loamy, 2 to 25 percent slopes | NWI classification: NA

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, et

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: (Explain alternative procedures here or in a separate report.)

Upland was taken in the forested area north of the Mahoning River and east of the substation.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes ( )	No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):	Wetland Hydrology Present? Yes ( ) No (●)

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

Remarks:

No hydrology indicators were observed within the data point.

VEGETATION - Use scientific names of plant

Sampling Point: **upl-aeh-20200106-03**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	30	☑	FACU
2. *Carya laciniosa*	10	☑	FACW
3. *Platanus occidentalis*	5	☐	FACW
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	45	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft)			
1. *Acer saccharum*	15	☑	FACU
2. *Prunus serotina*	5	☑	FACU
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	20	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	15	x 2 =	30	
FAC species	0	x 3 =	0	
FACU species	50	x 4 =	200	
UPL species	0	x 5 =	0	
Column Totals:	65	(A)	230	(B)

Prevalence Index = B/A = 3.538

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

Vegetation was disturbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the upland area.

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

Sampling Point: **upl-aeh-20200106-03**

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type [1]	Redox Features Loc[2]	Texture	Remarks
0-18	10YR 2/1	100					Silty Clay Loam	5% rocks throuhout soil

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ○ **No** ◉

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 06-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-aeh-20200106-04

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 2W

Landform (hillslope, terrace, etc.): Flat | Local relief (concave, convex, none): none | Slope: 2.0 % / 0.0 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.097599 | Long.: -80.656317 | Datum: WGS 84

Soil Map Unit Name: Ua - Udorthents, loamy, 2 to 25 percent slopes | NWI classification: NA

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, et

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: (Explain alternative procedures here or in a separate report.)

Upland was taken west of the railroad within a swale between the railroad and other construction/industrial activities.

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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [ ] 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)
- [x] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [ ] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes ( )	No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):	Wetland Hydrology Present? Yes ( ) No (●)

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

Remarks:

Geomorphic position was present as the data point was taken within a swale at the bottom of a hill. No other hydrologic indicators were present.

VEGETATION - Use scientific names of plant

Sampling Point: **upl-aeh-20200106-04**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	70	☑	FACU
2. *Ulmus rubra*	10	☐	FAC
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	80	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15ft)			
1. *Acer saccharum*	20	☑	FACU
2. *Lonicera morrowii*	10	☑	FACU
3. *Ulmus rubra*	5	☐	FAC
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	35	= Total Cover	

Herb Stratum (Plot size: 5ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	0	= Total Cover	

Woody Vine Stratum (Plot size: 30ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	15	x 3 =	45	
FACU species	100	x 4 =	400	
UPL species	0	x 5 =	0	
Column Totals:	115	(A)	445	(B)

Prevalence Index = B/A = 3.870

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

Vegetation was disturbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the upland area.

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

Sampling Point: **upl-aeh-20200106-04**

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type [1]	Redox Features Loc[2]	Texture	Remarks
0-7	10YR 2/1	100					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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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: concrete

Depth (inches): 7

Hydric Soil Present? **Yes** ○ **No** ◉

Remarks:

Soil was disturbed by the railroad. A restrictive layer was observed at 7 inches.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 06-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-aeh-20200106-05

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 2W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.093013 | Long.: -80.652092 | Datum: WGS 84

Soil Map Unit Name: CoC - Chili-Urban land complex, rolling | NWI classification: NA

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, et

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: (Explain alternative procedures here or in a separate report.)

Upland was taken south of a highway and north of the interstate. The upland point was to define the upland vegetation in the area.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

No hydrologic indicators were observed.

VEGETATION - Use scientific names of plant

Sampling Point: **upl-aeh-20200106-05**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	

Herb Stratum (Plot size: 5ft)			
1. *Poa pratensis*	30	☑	FACU
2. *Solidago canadensis*	25	☑	FACU
3. *Schedonorus arundinaceus*	10	☐	FACU
4. *Daucus carota*	5	☐	UPL
5. *Symphyotrichum ericoides*	5	☐	FACU
6. *Dipsacus fullonum*	5	☐	FACU
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	80	= Total Cover	

Woody Vine Stratum (Plot size: 30ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	**x 1 =**	0	
FACW species	0	**x 2 =**	0	
FAC species	0	**x 3 =**	0	
FACU species	75	**x 4 =**	300	
UPL species	5	**x 5 =**	25	
Column Totals:	80	**(A)**	325	**(B)**

Prevalence Index = B/A = 4.063

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

Vegetation was disturbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the upland area.

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

Sampling Point: **upl-aeh-20200106-05**

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	3/2	95	10YR	5/3	5	C	M	Silty 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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: rocks

Depth (inches): 4

Hydric Soil Present? **Yes** ○ **No** ◉

Remarks:

Soil was disturbed by possible historic/broken homesteads. A restrictive layer was observed at 4 inches.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-aeh-20200107-01

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 2W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.087148 | Long.: -80.633867 | Datum: WGS 84

Soil Map Unit Name: Ua-Udorthents, loamy, 2 to 25 percent slopes | NWI classification: NA

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, et

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: (Explain alternative procedures here or in a separate report.)

Upland was taken within the floodplain of the Mahoning River.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes ( )	No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):	Wetland Hydrology Present? Yes ( ) No (●)

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

Remarks:

Geomorphic position was present as the upland was taken in the floodplain. No other hydrologic indicators present.

VEGETATION - Use scientific names of plant

Sampling Point: **upl-aeh-20200107-01**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Carya ovata*	30	☑	FACU
2. *Acer rubrum*	20	☑	FAC
3. *Ulmus rubra*	15	☑	FAC
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	65	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	

Herb Stratum (Plot size: 5ft)			
1. *Solidago canadensis*	5	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	5	= Total Cover	

Woody Vine Stratum (Plot size: 30ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	0	**x 1 =**	0	
FACW species	0	**x 2 =**	0	
FAC species	35	**x 3 =**	105	
FACU species	35	**x 4 =**	140	
UPL species	0	**x 5 =**	0	
Column Totals:	70	**(A)**	245	**(B)**

Prevalence Index = B/A = 3.500

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is > 50%
- ☐ Prevalence Index is ≤3.0 [1]
- ☐ Morphological Adaptations [1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation [1] (Explain)

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

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the upland area.

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

Sampling Point: **upl-aeh-20200107-01**

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
0-18	10YR	3/2	100						Silty 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 soils present.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-aeh-20200107-02

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 2W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.089215 | Long.: -80.635801 | Datum: WGS 84

Soil Map Unit Name: Ua-Udorthents, loamy, 2 to 25 percent slopes | NWI classification: NA

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, et

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: (Explain alternative procedures here or in a separate report.)

Upland taken in a low spot within a disturbed area.

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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [ ] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes ( )	No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):	Wetland Hydrology Present? Yes ( ) No (●)

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

Remarks:

No wetland hydrology indicators present.

VEGETATION - Use scientific names of plant

Sampling Point: **upl-aeh-20200107-02**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	15	☑	FAC
2. *Ulmus rubra*	10	☑	FAC
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	25	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft)			
1. *Populus deltoides*	5	☑	FAC
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	5	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. *Solidago canadensis*	30	☑	FACU
2. *Oxalis corniculata*	10	☑	FACU
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	0	x 2 =	0	
FAC species	30	x 3 =	90	
FACU species	40	x 4 =	160	
UPL species	0	x 5 =	0	
Column Totals:	70	(A)	250	(B)

Prevalence Index = B/A = 3.571

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the upland area.

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

Sampling Point: **upl-aeh-20200107-02**

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	100						Silty Clay Loam	
6-18	10YR	5/1	60	10YR	5/6	40	C	M	Silty 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Soils exhibited a depleted matrix.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-aeh-20200107-04

Investigator(s): AEH, SKM | Section, Township, Range: S. NA T. NA R. NA

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.081992 | Long.: -80.618426 | Datum: WGS 84

Soil Map Unit Name: Ua-Udorthents, loamy, 2 to 25 percent slopes | NWI classification: NA

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, et

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: (Explain alternative procedures here or in a separate report.)

Upland was taken within a disturbed industrial site.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

No hydrologic indicators were present.

VEGETATION - Use scientific names of plant

Sampling Point: **upl-aeh-20200107-04**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15ft)			
1. *Ulmus rubra*	5	☑	FAC
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	5	= Total Cover	

Herb Stratum (Plot size: 5ft)			
1. *Schedonorus arundinaceus*	35	☑	FACU
2. *Solidago canadensis*	35	☑	FACU
3. *Dipsacus fullonum*	30	☑	FACU
4. *Symphyotrichum ericoides*	5	☐	FACU
5. *Plantago lanceolata*	2	☐	FACU
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	107	= Total Cover	

Woody Vine Stratum (Plot size: 30ft)		
1.	0	☐
2.	0	☐
3.	0	☐
4.	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	0	**x 2 =**	0	
FAC species	5	**x 3 =**	15	
FACU species	107	**x 4 =**	428	
UPL species	0	**x 5 =**	0	
Column Totals:	112	**(A)**	443	**(B)**

Prevalence Index = B/A = 3.955

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the upland area.

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

Soil

Sampling Point: **upl-aeh-20200107-04**

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	3/1	100						Silty Clay Loam	30% fill
6-18	10YR	5/3	80	10YR	5/6	20	C	M	Silty Clay Loam	30% fill

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 present.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 08-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-aeh-20200108-01

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 2W

Landform (hillslope, terrace, etc.): Flat | Local relief (concave, convex, none): concave | Slope: 1.0 % / 0.0 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.095088 | Long.: -80.651014 | Datum: WGS 84

Soil Map Unit Name: Ua-Udorthents, loamy, 2 to 25 percent slopes | NWI classification: NA

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: (Explain alternative procedures here or in a separate report.)

Upland was taken within an upland drainage feature (swale) of apparent recently constructed urban park landscape

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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [ ] 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)
- [x] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [x] FAC-neutral Test (D5)

Field Observations:

Surface Water Present? Yes ( ) No (●) Depth (inches):

Water Table Present? Yes ( ) No (●) Depth (inches):

Saturation Present? (includes capillary fringe) Yes ( ) No (●) Depth (inches):

Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

The upland is located within a swale and receives water from precipitation.

VEGETATION - Use scientific names of plants

Sampling Point: **upl-20200108-01**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	

Herb Stratum (Plot size: 5ft)			
1. *Cyperus esculentus*	60	☑	FACW
2. *Schedonorus arundinaceus*	15	☐	FACU
3. *Juncus effusus*	5	☐	OBL
4. *Plantago lanceolata*	5	☐	FACU
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	85	= Total Cover	

Woody Vine Stratum (Plot size: 30ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	5	**x 1 =**	5	
FACW species	60	**x 2 =**	120	
FAC species	0	**x 3 =**	0	
FACU species	20	**x 4 =**	80	
UPL species	0	**x 5 =**	0	
Column Totals:	85	**(A)**	205	**(B)**

Prevalence Index = B/A = 2.412

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the upland area.

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

Sampling Point: **upl-20200108-01**

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
0-18	10YR	4/3	100						Silty 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 soils were present within the upland area.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 08-Jan-20

Applicant/Owner: ATSI, Inc.. a FirstEnergy Company | State: OH | Sampling Point: upl-aeh-20200108-03

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 2W

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): convex | Slope: 1.5 % / 0.0 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.092507 | Long.: -80.635940 | Datum: WGS 84

Soil Map Unit Name: Ua-Udorthents, loamy, 2 to 25 percent slopes | NWI classification: NA

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: (Explain alternative procedures here or in a separate report.)

Upland area between the railroad corridor and commercial lots.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes ( )	No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):	Wetland Hydrology Present? Yes ( ) No (●)

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

Remarks:

No hydrologic indicators present.

VEGETATION - Use scientific names of plants

Sampling Point: **upl-aeh-20200108-03**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	5	☑	FAC
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	5	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft)			
1. *Fagus grandifolia*	10	☑	FACU
2. *Acer negundo*	5	☑	FAC
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	15	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. *Solidago canadensis*	40	☑	FACU
2. *Reynoutria japonica*	20	☑	FACU
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	60	= Total Cover	
Woody Vine Stratum (Plot size: 30ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	0	**x 2 =**	0	
FAC species	10	**x 3 =**	30	
FACU species	70	**x 4 =**	280	
UPL species	0	**x 5 =**	0	
Column Totals:	80	**(A)**	310	**(B)**

Prevalence Index = B/A = 3.875

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the upland area.

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

Sampling Point: **upl-aeh-20200108-03**

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type [1]	Redox Features Loc[2]	Texture	Remarks
0-10	10YR 2/1	100					Silty 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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: rock

Depth (inches): 10

Hydric Soil Present? **Yes** ○ **No** ◉

Remarks:

Restrictive layer at 10 inches.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 06-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-bl-20200106-02

Investigator(s): B Leopold, R Massa | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.09891 | Long.: -80.59684 | Datum: NAD83

Soil Map Unit Name: FhB - Fitchville silt loam, till substratum, 2 to 6 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: (Explain alternative procedures here or in a separate report.)

Data point upl-bl-20200106-02 is not associated with a wetland. Suspicious area indentified from desktop analysis of historical aerial photos. Investigated for wetland conditions, this location not within a wetland. It looks like an old depression area bordered by sparse wetland-type vegetation but filled in at some time (evidenced by soil profile). This location does meet hydrophytic vegetation criteria but not hydrology or soil criteria. Disturbed soils indicated by gravel fill present at 5 inches depth, heavily compacted, with loose sandy loam upper layer.

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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [ ] FAC-neutral Test (D5)

Field Observations:

Surface Water Present? Yes ( ) No (●) Depth (inches):

Water Table Present? Yes ( ) No (●) Depth (inches):

Saturation Present? (includes capillary fringe) Yes ( ) No (●) Depth (inches):

Wetland Hydrology Present? Yes ( ) No (●)

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

Remarks:

No hydrology indicators present across feature.

VEGETATION - Use scientific names of plants

Sampling Point: **upl-bl-20200106-02**

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix babylonica*	10	☑	FAC
2. *Betula alleghaniensis*	3	☑	FAC
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	13	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Rhamnus cathartica*	10	☑	FAC
2. *Betula nigra*	10	☑	FACW
3. *Lonicera morrowii*	20	☑	FACU
4. *Rubus allegheniensis*	3	☐	FACU
5. *Acer saccharum*	5	☐	FACU
6.	0	☐	
7.	0	☐	
	48	= Total Cover	
Herb Stratum (Plot size: 5' r)			
1. *Brassica nigra*	10	☐	UPL
2. *Solidago altissima*	30	☑	FACU
3. *Agrimonia parviflora*	10	☐	FAC
4. *Geum canadense*	2	☐	FAC
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	52	= Total Cover	
Woody Vine Stratum (Plot size: 30'r)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	**x 1 =**	0	
FACW species	10	**x 2 =**	20	
FAC species	35	**x 3 =**	105	
FACU species	58	**x 4 =**	232	
UPL species	10	**x 5 =**	50	
Column Totals:	113	**(A)**	407	**(B)**

Prevalence Index = B/A = 3.602

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.

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Photos provided in Appendix D.

Hydrophytic vegetation present via Dominance Test indicator due to predominance of FAC species, though location does not pass Prevalence Index indicator. FAC vegetation mostly present around edges of flat, filled in area.

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

Soil

Sampling Point: **upl-bl-20200106-02**

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type [1]	Redox Features Loc[2]	Texture	Remarks
0-5	2.5Y 4/2	100					Sandy Loam	gravelly
5+								gravel fill

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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: gravel & concrete fill

Depth (inches): 5

Hydric Soil Present? **Yes** ○ **No** ◉

Remarks:

Gravel and concrete fill at 5-inch depth across entire area; possible old low area filled in long past. No hydric soil indicators present due to absence of redox features in low chroma and low value matrix. Loose sandy loam texture most likely related to gravel fill present.

Based on site investigation, this location is not in a wetland as it does not meet hydrology or hydric soil criteria. The loose sandy loam soil indicates significantly disturbed soils, though insufficient evidence present (lack of hydrology indicators) to conclude this location meets wetland criteria.

Upland RLP-01

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 08-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-aeh-20200108-02

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 2W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.086133 | Long.: -80.627218 | Datum: WGS 84

Soil Map Unit Name: Ua-Udorthents, loamy, 2 to 25 percent slopes | NWI classification: NA

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: (Explain alternative procedures here or in a separate report.)

Upland point of w-aeh-20200108-01, located within railroad corridor.

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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [ ] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes ( )	No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):	Wetland Hydrology Present? Yes ( ) No (●)

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

Remarks:

No hydrology present within the upland area.

Upland RLP-01

VEGETATION - Use scientific names of plants

Sampling Point: **upl-aeh-20200108-02**

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Rosa multiflora*	30	☑	FACU
2. *Platanus occidentalis*	5	☐	FACW
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	35	= Total Cover	
Herb Stratum (Plot size:)			
1. *Dipsacus fullonum*	20	☑	FACU
2. *Setaria faberi*	20	☑	FACU
3. *Poa pratensis*	10	☐	FACU
4. *Xanthium strumarium*	10	☐	FAC
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	60	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	5	x 2 =	10	
FAC species	10	x 3 =	30	
FACU species	80	x 4 =	320	
UPL species	0	x 5 =	0	
Column Totals:	95	(A)	360	(B)

Prevalence Index = B/A = 3.789

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the upland area.

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

Soil

Sampling Point: **upl-aeh-20200108-02**

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
0-18	10YR	4/3	100						Silty Clay	40% fill

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 present within the upland area.

Upland RLP-02

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 06-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-jbl-20200106-01

Investigator(s): JBL, JTT | Section, Township, Range: S. | T. 2N | R. 1W

Landform (hillslope, terrace, etc.): Toeslope | Local relief (concave, convex, none): convex | Slope: 3.0 % / 1.7 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.095705 | Long.: -80.611118 | Datum: NAD 83

Soil Map Unit Name: DkF-Dekalb very stony loam, 25 to 50 percent slopes | NWI classification: N/A

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

Are Vegetation [ ], Soil [ ], or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

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

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

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: (Explain alternative procedures here or in a separate report.)

Upland data point down gradient of stream hh-jbl-20200106-04 where it loses definition. Located in valley south of Oak Street Extension, between hh-04 and hh-05. data point associated with w-jbl-20200106-01 just east of data point.

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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [x] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [ ] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes ( )	No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):	Wetland Hydrology Present? Yes ( ) No (●)

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

Remarks:

drainage patterns present downgradient of hh-04. No other secondary indicators were observed-the sample point does not meet the wetland hydrology criteria.

Upland RLP-02

VEGETATION - Use scientific names of plant

Sampling Point: **upl-jbl-20200106-01**

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Prunus serotina*	35	☑	FACU
2. *Acer saccharum*	20	☑	FACU
3. *Platanus occidentalis*	10	☐	FACW
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Rosa multiflora*	25	☑	FACU
2. *Acer saccharum*	15	☑	FACU
3. *Rosa setigera*	15	☑	FACU
4. *Fraxinus pennsylvanica*	5	☐	FACW
5.	0	☐	
6.	0	☐	
7.	0	☐	
	60	= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Ageratina altissima*	25	☑	FACU
2. *Alliaria petiolata*	20	☑	FACU
3. *Lobelia siphilitica*	20	☑	FACW
4. *Phytolacca americana*	20	☑	FACU
5. *Geum canadense*	5	☐	FAC
6. *Solidago gigantea*	5	☐	FACW
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	95	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Vitis riparia*	0	☐	FAC
2.	0	☐	
3.	0	☐	
4.	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: 9 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 11.1% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	40	x 2 =	80	
FAC species	5	x 3 =	15	
FACU species	175	x 4 =	700	
UPL species	0	x 5 =	0	
Column Totals:	220	(A)	795	(B)

Prevalence Index = B/A = 3.614

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

Sycamore the only dominant hydrophytic species. Sample Point did not meet any of the hydrophytic vegetaion indicators.

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

Soil

Sampling Point: **upl-jbl-20200106-01**

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type [1]	Redox Features Loc[2]	Texture	Remarks
0-12	10YR 4/2	100					Sandy Clay Loam	gravel at 12"

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☑ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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: gravel

Depth (inches): 12

Hydric Soil Present? **Yes** ○ **No** ◉

Remarks:

No hydric indicators. Rock/gravel at 12 inches. No indicators obsvered. The sample point upl-jbl-20200106-01 did not meet the 3 criteria to be classified as a wetland.

Upland RLP-03

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-jbl-20200107-02

Investigator(s): JBL,JTT | Section, Township, Range: S. | T. 2N | R. 1W

Landform (hillslope, terrace, etc.): Undulating | Local relief (concave, convex, none): flat | Slope: 2.0 % / 0.0 °

Subregion (LRR or MLRA): LRR R | Lat.: 41.096807 | Long.: -80.608659 | Datum: NAD 83

Soil Map Unit Name: CmC - Chili loam, 6 to 12 percent slopes | NWI classification: N/A

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

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

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

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

Hydrophytic Vegetation Present?	Yes ( )	No (●)	
Hydric Soil Present?	Yes ( )	No (●)	Is the Sampled Area within a Wetland? Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks: (Explain alternative procedures here or in a separate report.)

Upland 02 on slope. Mounds in area indicate former earthwork or old spoils piles. Sample point is on the edge of a mowed path. Associated with wetland w-jbl-20200107-02.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes ( )	No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes (●)	No ( )	Depth (inches): 14	Wetland Hydrology Present? Yes ( ) No (●)

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

Remarks:

No hydrology indicators present. Saturation was present at 14 in, which is too deep to meet the hydrologic indicator

VEGETATION - Use scientific names of plants

Sampling Point: **upl-jbl-20200107-02**

Tree Stratum (Plot size: 10')	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10')			
1. *Pyrus communis*	5	☐	UPL
2. *Quercus palustris*	15	☑	FACW
3. *Rhamnus cathartica*	15	☑	FAC
4. *Cornus obliqua*	5	☐	FACW
5.	0	☐	
6.	0	☐	
7.	0	☐	
	40	= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Poa pratensis*	25	☑	FACU
2. *Achillea millefolium*	15	☐	FACU
3. *Festuca arundinacea*	20	☑	FACU
4. *Symphyotrichum lateriflorum*	15	☐	FAC
5. *Solidago gigantea*	10	☐	FACW
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	85	= Total Cover	
Woody Vine Stratum (Plot size: 10')			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	0	x 1 =	0	
FACW species	30	x 2 =	60	
FAC species	30	x 3 =	90	
FACU species	60	x 4 =	240	
UPL species	5	x 5 =	25	
Column Totals:	125	(A)	415	(B)

Prevalence Index = B/A = 3.320

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.

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

plot limited to 10 ft radius for trees/shrubs to include hillside NOT include depressional wetland swale to the northeast. Vegetaion did not meet any of the hydrophytic indicators

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

Soil

Sampling Point: **upl-jbl-20200107-02**

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
0-11	10YR	4/3	100						Clay Loam	
11-17	10YR	4/2	98	10YR	4/6	2			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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Soil profile indicated no hydric soil indicators. The sample point upl-jbl-20200107-02 did not meet the vegetation, soil, or hydrology indicators to be classified as a wetland.

Upland RLP-04

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-jbl-20200107-01

Investigator(s): JBL,JTT | Section, Township, Range: S. | T. 2N | R. 1W

Landform (hillslope, terrace, etc.): Hillside | Local relief (concave, convex, none): none | Slope: 1.0 % / 0.0 °

Subregion (LRR or MLRA): LRR R | Lat.: 41.09686 | Long.: -80.60706 | Datum: NAD 83

Soil Map Unit Name: BtB - Bogart loam, till substratum, 2 to 6 percent slopes | NWI classification: N/A

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

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

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

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

Hydrophytic Vegetation Present? Yes ( ) No (●)	Is the Sampled Area within a Wetland? Yes ( ) No (●)
Hydric Soil Present? Yes ( ) No (●)	
Wetland Hydrology Present? Yes ( ) No (●)	

Remarks: (Explain alternative procedures here or in a separate report.)

Upland 01 on slope near small brush pile on edge of residential mowed lawn area. Associated with wetland w-jbl-20200107-01.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present? Yes ( ) No (●) Depth (inches):

Water Table Present? Yes ( ) No (●) Depth (inches):

Saturation Present? (includes capillary fringe) Yes ( ) No (●) Depth (inches):

Wetland Hydrology Present? Yes ( ) No (●)

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

Remarks:

No wetland hydrology indicators observed

VEGETATION - Use scientific names of plants

Sampling Point: **upl-jbl-20200107-01**

Tree Stratum (Plot size: 10')	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10')			
1. *Cornus drummondii*	5	☑	FAC
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	5	= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Poa palustris*	20	☑	FACW
2. *Poa pratensis*	25	☑	FACU
3. *Glechoma hederacea*	15	☑	FACU
4. *Trifolium repens*	15	☑	FACU
5. *Conyza canadensis*	15	☑	FACU
6. *Aquilegia canadensis*	10	☐	FACU
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	100	= Total Cover	
Woody Vine Stratum (Plot size: 10')			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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: 6 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	20	x 2 =	40	
FAC species	5	x 3 =	15	
FACU species	80	x 4 =	320	
UPL species	0	x 5 =	0	
Column Totals:	105	(A)	375	(B)

Prevalence Index = B/A = 3.571

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.

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

plot only includes hilside and does not inclde wetland swale. Plot contained mowed vegetation as well as undisturbed vegetation in the brush pile.2 of the 6 dominant species were determined to be hydrophytic species. Sample point did not meet the hydrophytic vegetation criteria.

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

Soil

Sampling Point: **upl-jbl-20200107-01**

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
0-12	10YR	3/2	100						Clay Loam	
12-17	10YR	3/2	99	7.5YR	4/4	1	C	M	Clay Loam	distinct

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Soil profile indicated no hydric soil indicators. The sample point upl-jbl-20200107-01 did not meet the vegetation, soil, or hydrology indicators to be classified as a wetland.

Upland RLP-05

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-jbl-20200107-03

Investigator(s): JBL,JTT | Section, Township, Range: S. | T. 2N | R. 1W

Landform (hillslope, terrace, etc.): Hillside | Local relief (concave, convex, none): convex | Slope: 5.0 % / 0.0 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.0978 | Long.: -80.60465 | Datum: NAD 83

Soil Map Unit Name: CmC - Chili loam, 6 to 12 percent slopes | NWI classification: N/A

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

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

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

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

Hydrophytic Vegetation Present?	Yes ( )	No (●)	
Hydric Soil Present?	Yes ( )	No (●)	Is the Sampled Area within a Wetland? Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks: (Explain alternative procedures here or in a separate report.)

Upland 03 on hillside. Scrub shrub area. Associated with wetland w-jbl-20200107-03.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes ( )	No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):	Wetland Hydrology Present? Yes ( ) No (●)

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

Remarks:

No wetland hydrology indicators observed.

VEGETATION - Use scientific names of plants

Sampling Point: **upl-jbl-20200107-03**

Tree Stratum (Plot size: 20')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Prunus serotina*	15	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	15	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Alnus glutinosa*	5	☐	FACW
2. *Cornus alba*	30	☑	FACW
3. *Rosa multiflora*	20	☑	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	55	= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Geum canadense*	15	☑	FAC
2. *Solidago canadensis*	20	☑	FACU
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	35	= Total Cover	
Woody Vine Stratum (Plot size: 20')			
1. *Lonicera japonica*	10	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
	10	= 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: 6 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	35	x 2 =	70	
FAC species	15	x 3 =	45	
FACU species	65	x 4 =	260	
UPL species	0	x 5 =	0	
Column Totals:	115	(A)	375	(B)

Prevalence Index = B/A = 3.261

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.

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

No hydrophytic vegetation indicators present.

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

Soil

Sampling Point: **upl-jbl-20200107-03**

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
0-9	10YR	4/3	100						Clay Loam	
9-16	10YR	4/2	100						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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Soil profile indicated no hydric soil indicators. The sample point upl-jbl-20200107-03 did not meet the vegetation, soil, or hydrology indicators to be classified as a wetland.

Upland RLP-06

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-jbl-20200107-04

Investigator(s): JBL,JTT | Section, Township, Range: S. | T. 2N | R. 1W

Landform (hillslope, terrace, etc.): Hillside | Local relief (concave, convex, none): convex | Slope: 5.0 % / 0.0 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.09788 | Long.: -80.60394 | Datum: NAD 83

Soil Map Unit Name: CmC - Chili loam, 6 to 12 percent slopes | NWI classification: N/A

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

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

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

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

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	Is the Sampled Area within a Wetland? Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks: (Explain alternative procedures here or in a separate report.)

Upland 04 on adjacent hillside. Associated with wetland w-jbl-20200107-04.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes ( )	No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):	Wetland Hydrology Present? Yes ( ) No (●)

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

Remarks:

No wetland hydrology indicators observed.

VEGETATION - Use scientific names of plants

Sampling Point: **upl-jbl-20200107-04**

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus palustris*	55	☑	FACW
2. *Prunus serotina*	20	☑	FACU
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	75	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Rosa multiflora*	20	☑	FACU
2. *Frangula alnus*	15	☑	FAC
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	35	= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Solidago gigantea*	5	☑	FACW
2. *Geum canadense*	10	☑	FAC
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	15	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Lonicera japonica*	10	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
	10	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 57.1% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	60	x 2 =	120	
FAC species	25	x 3 =	75	
FACU species	50	x 4 =	200	
UPL species	0	x 5 =	0	
Column Totals:	135	(A)	395	(B)

Prevalence Index = B/A = 2.926

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.

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

4 of the 7 dominant species were hydrophytic- the sample point meets the indicators of dominance test and prevalance index.

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

Soil

Sampling Point: **upl-jbl-20200107-04**

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
0-10	10YR	4/3	100						Sandy Clay Loam	
10-18	10YR	4/4	100						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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Soil profile indicated no hydric soil indicators. The sample point upl-jbl-20200107-04 did meet the vegetation hydrophytic indicators; however, it did not meet the soil or hydrology indicators to be classified as a wetland.

Upland RLP-07

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-JBL-20200107-05

Investigator(s): JBL,JTT | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.09773 | Long.: -80.60299 | Datum: NAD 83

Soil Map Unit Name: BtB - Bogart loam, till substratum, 2 to 6 percent slopes | NWI classification: N/A

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

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

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

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

Hydrophytic Vegetation Present?	Yes ( )	No (●)	
Hydric Soil Present?	Yes ( )	No (●)	Is the Sampled Area within a Wetland? Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks: (Explain alternative procedures here or in a separate report.)

Upland 05 data point between associated wetland and Oak Street Extension. Associated with wetland w-jbl-20200107-05.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes ( )	No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):	Wetland Hydrology Present? Yes ( ) No (●)

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

Remarks:

No hydrology indicators present.

VEGETATION - Use scientific names of plants

Sampling Point: **upl-JBL-20200107-05**

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pyrus communis*	2	☐	UPL
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	2	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Frangula alnus*	30	☑	FAC
2. *Rosa multiflora*	25	☑	FACU
3. *Cornus amomum*	10	☐	FACW
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	65	= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Symphyotrichum ericoides*	15	☑	FACU
2. *Solidago gigantea*	5	☑	FACW
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	20	= Total Cover	
Woody Vine Stratum (Plot size: 10')			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	15	x 2 =	30	
FAC species	30	x 3 =	90	
FACU species	40	x 4 =	160	
UPL species	2	x 5 =	10	
Column Totals:	87	(A)	290	(B)

Prevalence Index = B/A = 3.333

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.

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

No hydrophytic vegetation indicators present. Tree layer not applicable to Dominance Test due to total cover<5%

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

Soil

Sampling Point: **upl-JBL-20200107-05**

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type [1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR 4/3	100					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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Uniform coloring throughout, no hydric soil indicators present. The sample point upl-jbl-20200107-05 did not meet the vegetation, soil, or hydrology indicators to be classified as a wetland.

Upland RLP-08ab

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 14-Jun-16

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-jbl-20200107-06a,b

Investigator(s): JTT, JBL | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR R | Lat.: 41.097507 | Long.: -80.601570 | Datum: NAD83

Soil Map Unit Name: FhB-Fitchville silt loam, till substratum, 2 to 6 percent slopes | NWI classification: N/A

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

Are Vegetation [ ], Soil [ ], or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

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

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

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: (Explain alternative procedures here or in a separate report.)

Upland data point for PEM/PFO. Upland located in thick scrub-shrub-wooded area west of wetland-jbl-2020010706b and south of Oak Street Extension. Roadside ditch located between this sample point and Oak street extension. Roadside ditch will flow to west towards wetland-jbl-2020010706a,b.

Hydrology

Wetland Hydrology Indicators:

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

- [ ] Surface Water (A1)
- [x] High Water Table (A2)
- [x] 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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [ ] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes (●)	No ( )	Depth (inches): 12	
Saturation Present? (includes capillary fringe)	Yes (●)	No ( )	Depth (inches): 9	Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

Area receives hydrology from precipitation. Sample point meets the saturation and high water table hydrologic indicators.

Upland RLP-08ab

VEGETATION - Use scientific names of plant

Sampling Point: **upl-jbl-20200107-06**

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Rosa multiflora*	30	☑	FACU
2. *Robinia pseudoacacia*	3	☐	FACU
3. *Lonicera maackii*	2	☐	UPL
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	35	= Total Cover	
Herb Stratum (Plot size: 5')			
1. *Symphyotrichum ericoides*	20	☑	FACU
2. *Epilobium coloratum*	15	☑	OBL
3. *Symphyotrichum novae-angliae*	5	☐	FACW
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	40	= Total Cover	
Woody Vine Stratum (Plot size: 15')			
1. *Lonicera japonica*	5	☑	FACU
2. *Rosa setigera*	5	☑	FACU
3.	0	☐	
4.	0	☐	
	10	= 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: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 20.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	63	x 4 =	252
UPL species	2	x 5 =	10
Column Totals:	85 (A)		287 (B)

Prevalence Index = B/A = 3.376

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

1 of the 5 dominant species was hydrophytic. Vegetation at this data point does not meet any hydrophytic indicators.

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

Soil

Sampling Point: **upl-jbl-20200107-06**

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
0-11	10YR	3/2	100						Clay Loam	
11-16	10YR	4/2	99	10YR	5/6	1	C	M	Clay Loam	distinct redox

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Soil profile did not meet hydric soil indicators

Based on site investigations this sample point does not meet the three wetland criteria to be classified as a wetland. Although the hydrology was present at this time, the sample point did not meet the vegeation or soil criteria.

Upland RLP-09ab

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 08-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-bl-20200108-02

Investigator(s): B Leopold, R Massa | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.09777 | Long.: -80.59952 | Datum: NAD83

Soil Map Unit Name: BtB - Bogart loam, till substratum, 2 to 6 percent slopes | NWI classification: n/a

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

Are Vegetation [ ], Soil [ ], or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

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

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

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: (Explain alternative procedures here or in a separate report.)

Data point upl-bl-20200108-02 is point out associated with wetland w-bl-20200108-02 (PSS). Point out located about 5' north of wetland boundary in shrub-scrub habitat at equal elevation.

Hydrology

Wetland Hydrology Indicators:

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

- [ ] Surface Water (A1)
- [x] High Water Table (A2)
- [x] 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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] Hydrogen Sulfide Odor (C1)
- [x] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [ ] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes (●)	No ( )	Depth (inches): 7	
Saturation Present? (includes capillary fringe)	Yes (●)	No ( )	Depth (inches): 4	Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

Primary hydrology indicators present as saturated soils (within 12" of surface) and high water table.

Upland RLP-09ab

VEGETATION - Use scientific names of plant

Sampling Point: **upl-bl-20200108-02**

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Crataegus crus-galli*	30	☑	FAC
2. *Acer rubrum*	5	☐	FAC
3.		☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	35	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Rhamnus cathartica*	10	☑	FAC
2. *Betula alleghaniensis*	15	☑	FAC
3. *Rosa multiflora*	15	☑	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	40	= Total Cover	
Herb Stratum (Plot size: 5' r)			
1. *Solidago altissima*	10	☑	FACU
2. *Symphyotrichum pilosum*	5	☑	FACU
3. *Fragaria virginiana*	5	☑	FACU
4. *Rubus occidentalis*	5	☑	UPL
5.		☐	
6.		☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	25	= Total Cover	
Woody Vine Stratum (Plot size: 30'r)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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: 8 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 37.5% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	60	x 3 =	180	
FACU species	35	x 4 =	140	
UPL species	5	x 5 =	25	
Column Totals:	100	(A)	345	(B)

Prevalence Index = B/A = 3.450

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

Photos provided in Appendix D.

No hydrophytic vegetation indicators present.

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

Soil

Sampling Point: **upl-bl-20200108-02**

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
0-7	10YR	4/2	95	10YR	5/8	5	C	PL	Silt Loam	
7-17	10YR	5/3	95	10YR	6/6	5	C	M	Silty 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 due to presence of redox features in low chroma and high value matrix in upper layer.

Based on site investigation, this location is not in a wetland as it does not meet hydrophytic vegetation criteria.

Upland RLP-10

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 08-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-bl-20200108-01

Investigator(s): B Leopold, R Massa | Section, Township, Range: S. | T. 2N | R. 1W

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): convex | Slope: 3.0 % / 1.7 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.09776 | Long.: -80.59849 | Datum: NAD83

Soil Map Unit Name: CoC - Chili-Urban land complex, rolling | 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, et

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: (Explain alternative procedures here or in a separate report.)

Data point upl-bl-20200108-01 is point out associated with wetland w-bl-20200108-01 (PSS). Point out located about 10' west of PSS boundary in upland shrub-scrub.

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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [ ] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes ( )	No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):	Wetland Hydrology Present? Yes ( ) No (●)

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

Remarks:

No primary hydrology indicators present.

Upland RLP-10

VEGETATION - Use scientific names of plant

Sampling Point: **upl-bl-20200108-01**

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus tremuloides*	20	☑	FACU
2. *Acer rubrum*	15	☑	FAC
3. *Quercus alba*	10	☑	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	45	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Acer rubrum*	10	☐	FAC
2. *Rosa multiflora*	20	☑	FACU
3. *Ulmus rubra*	10	☐	FAC
4. *Lonicera morrowii*	20	☑	FACU
5.	0	☐	
6.	0	☐	
7.	0	☐	
	60	= Total Cover	

Herb Stratum (Plot size: 5' r)			
1. *Solidago altissima*	10	☑	FACU
2. *Symphyotrichum pilosum*	10	☑	FACU
3. *Lonicera japonica*	30	☑	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	50	= Total Cover	

Woody Vine Stratum (Plot size: 30'r)			
1. *Lonicera japonica*	5	☑	FACU
2.	0	☐	
3.	0	☐	
4.	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: 9 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 11.1% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	35	x 3 =	105	
FACU species	125	x 4 =	500	
UPL species	0	x 5 =	0	
Column Totals:	160	(A)	605	(B)

Prevalence Index = B/A = 3.781

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

Photos provided in Appendix D.

Hydrophytic vegetation indicators not present.

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

Soil

Sampling Point: **upl-bl-20200108-01**

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
0-7	10YR	3/2	100						Silt Loam	
7-14	10YR	3/2	90	7.5YR	4/6	10	C	PL	Silt 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 in soil profile due to presence of redox features in low chroma and low value matrix of lower layer meeting thickness (4"+) and depth (starting <=8") requirements.

Based on site investigation, this location is not in a wetland as it does not meet hydrology or hydrophytic vegetation criteria.

Upland RLP-11

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-bl-20200107-05

Investigator(s): B Leopold, R Massa | Section, Township, Range: S. | T. 2N | R. 1W

Landform (hillslope, terrace, etc.): Saddle | Local relief (concave, convex, none): convex | Slope: 3.0 % / 1.7 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.097844 | Long.: -80.59763 | Datum: NAD83

Soil Map Unit Name: BgB - Bogart loam, 2 to 6 percent slopes | NWI classification: n/a

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

Are Vegetation [ ], Soil [ ], or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

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

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

Hydrophytic Vegetation Present?	Yes ( )	No (●)	
Hydric Soil Present?	Yes (●)	No ( )	Is the Sampled Area within a Wetland? Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks: (Explain alternative procedures here or in a separate report.)

Data point upl-bl-20200107-05 is point out associated with wetland w-bl-20200107-05 (PEM). Point out located about 5' west of wetland boundary in wooded area at a slightly higher elevation.

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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [ ] 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 RLP-11

VEGETATION - Use scientific names of plants

Sampling Point: **upl-bl-20200107-05**

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus americana*	5	☐	FACW
2. *Populus tremuloides*	50	☑	FACU
3. *Acer rubrum*	5	☐	FAC
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Acer rubrum*	30	☑	FAC
2. *Ulmus americana*	10	☑	FACW
3. *Viburnum lentago*	10	☑	FAC
4. *Lonicera morrowii*	10	☑	FACU
5.	0	☐	
6.	0	☐	
7.	0	☐	
	60	= Total Cover	
Herb Stratum (Plot size: 5' r)			
1. *Fallopia japonica*	40	☑	FACU
2. *Lonicera japonica*	10	☐	FACU
3. *Hydrophyllum canadense*	10	☐	FAC
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	60	= Total Cover	
Woody Vine Stratum (Plot size: 30'r)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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: 6 (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	15	x 2 =	30	
FAC species	55	x 3 =	165	
FACU species	110	x 4 =	440	
UPL species	0	x 5 =	0	
Column Totals:	180	(A)	635	(B)

Prevalence Index = B/A = 3.528

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

Photos provided in Appendix D.

No hydrophytic vegetation indicators present.

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

Soil

Sampling Point: **upl-bl-20200107-05**

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
0-16	10YR	4/2	90	10YR	5/6	10	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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 redox features in low chroma and low value matrix. Location appears to be possible spoils pile.

Based on site investigation, this location is not in a wetland as it does not meet hydrology or hydrophytic vegetation criteria.

Upland RLP-12

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-bl-20200107-04

Investigator(s): B Leopold, R Massa | Section, Township, Range: S. | T. 2N | R. 1W

Landform (hillslope, terrace, etc.): Flat | Local relief (concave, convex, none): convex | Slope: 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.09793 | Long.: -80.59625 | Datum: NAD83

Soil Map Unit Name: Se - Sebring silt loam, till substratum, 0 to 2 percent slopes | NWI classification: n/a

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

Are Vegetation [ ], Soil [ ], or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

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

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

Hydrophytic Vegetation Present?	Yes ( )	No (●)	
Hydric Soil Present?	Yes ( )	No (●)	Is the Sampled Area within a Wetland? Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks: (Explain alternative procedures here or in a separate report.)

Data point upl-bl-20200107-04 is point out associated with wetland w-bl-20200107-04 (PEM). Point out located about 20' south of wetland boundary in same roadside drainage swale at a slightly higher elevation.

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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [ ] 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 RLP-12

VEGETATION - Use scientific names of plants

Sampling Point: **upl-bl-20200107-04**

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	5	☑	FACU
2. *Quercus palustris*	15	☑	FACW
3. *Quercus alba*	5	☑	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	25	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Rosa multiflora*	20	☑	FACU
2. *Fraxinus pennsylvanica*	15	☑	FACW
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	35	= Total Cover	

Herb Stratum (Plot size: 5' r)			
1. *Solidago altissima*	60	☑	FACU
2. *Scirpus atrovirens*	15	☐	OBL
3. *Carex spicata*	15	☐	FACU
4. *Geum canadense*	5	☐	FAC
5. *Poa pratensis*	10	☐	FACU
6. *Carex blanda*	10	☐	FAC
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	115	= Total Cover	

Woody Vine Stratum (Plot size: 30'r)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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: 6 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	15	x 1 =	15	
FACW species	30	x 2 =	60	
FAC species	15	x 3 =	45	
FACU species	115	x 4 =	460	
UPL species	0	x 5 =	0	
Column Totals:	175	(A)	580	(B)

Prevalence Index = B/A = 3.314

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

Photos provided in Appendix D.

No hydrophytic vegetation indicators present.

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

Soil

Sampling Point: **upl-bl-20200107-04**

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
0-13	10YR	3/2	100						Sandy Loam	
13-17	10YR	2/2	90	10YR	3/3	10	C	PL	sandy silt 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 due to absence of redox features in low chroma and low value matrix in upper layer.

Based on site investigation, this location is not in a wetland as it does not meet hydrology, hydrophytic vegetation or hydric soil criteria.

Upland RLP-13

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 06-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-bl-20200106-01

Investigator(s): B Leopold, R Massa | Section, Township, Range: S. | T. 2N | R. 1W

Landform (hillslope, terrace, etc.): Flat | Local relief (concave, convex, none): none | Slope: 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.09834 | Long.: -80.59672 | Datum: NAD83

Soil Map Unit Name: Se - Sebring silt loam, till substratum, 0 to 2 percent slopes | NWI classification: N/A

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

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

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

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

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	Is the Sampled Area within a Wetland? Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks: (Explain alternative procedures here or in a separate report.)

Data point upl-bl-20200106-01 is point out associated with wetland w-bl-20200106-01 (PSS). Point out located about 10' south of wetland boundary in undisturbed shrub-scrub community.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present? Yes ( ) No (●) Depth (inches):

Water Table Present? Yes ( ) No (●) Depth (inches):

Saturation Present? (includes capillary fringe) Yes ( ) No (●) Depth (inches):

Wetland Hydrology Present? Yes ( ) No (●)

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

Remarks:

No hydrology indicators present.

Upland RLP-13

VEGETATION - Use scientific names of plants

Sampling Point: **upl-bl-20200106-01**

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Crataegus crus-galli*	5	☑	FAC
2.		☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	5	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Lonicera morrowii*	15	☑	FACU
2. *Rhamnus cathartica*	40	☑	FAC
3. *Rosa multiflora*	10	☐	FACU
4. *Rhus typhina*	5	☐	UPL
5. *Viburnum lentago*	5	☐	FAC
6.	0	☐	
7.	0	☐	
	75	= Total Cover	
Herb Stratum (Plot size: 5' r)			
1. *Cornus racemosa*	5	☑	FAC
2. *Parathelypteris noveboracensis*	5	☑	FAC
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	10	= Total Cover	
Woody Vine Stratum (Plot size: 30'r)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	**x 1 =**	0	
FACW species	0	**x 2 =**	0	
FAC species	60	**x 3 =**	180	
FACU species	25	**x 4 =**	100	
UPL species	5	**x 5 =**	25	
Column Totals:	90	**(A)**	305	**(B)**

Prevalence Index = B/A = 3.389

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.

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Photos provided in Appendix D.

Hydrophytic vegetation present via Dominance Test indicator due to predominance of FAC species, though location does not pass Prevalence Index indicator.

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

Soil

Sampling Point: **upl-bl-20200106-01**

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
0-16	10YR	3/2	100						Silt 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 in soil profile due to absence of redox features in low chroma and low value matrix.

Based on site investigation, this location is not in a wetland as it does not meet hydrology or hydric soil criteria.

Upland RLP-14

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-bl-20200107-03

Investigator(s): B Leopold, R Massa | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.09959 | Long.: -80.59586 | Datum: NAD83

Soil Map Unit Name: JtB - Jimtown loam, 2 to 6 percent slopes | NWI classification: n/a

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

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

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

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

Hydrophytic Vegetation Present?	Yes ( )	No (●)	
Hydric Soil Present?	Yes (●)	No ( )	Is the Sampled Area within a Wetland? Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks: (Explain alternative procedures here or in a separate report.)

Data point upl-bl-20200107-03 is point out associated with wetland w-bl-20200107-03 (PFO). Point out located about 10' east of wetland boundary in wooded area.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes ( )	No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):	Wetland Hydrology Present? Yes ( ) No (●)

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

Remarks:

No hydrology indicators present.

Upland RLP-14

VEGETATION - Use scientific names of plants

Sampling Point: **upl-bl-20200107-03**

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	30	☑	FACU
2. *Acer rubrum*	10	☐	FAC
3. *Quercus alba*	15	☑	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	55	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Lindera benzoin*	20	☑	FACW
2. *Smilax glauca*	10	☑	FACU
3. *Acer rubrum*	10	☑	FAC
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	40	= Total Cover	

Herb Stratum (Plot size: 5' r)			
1. *Carex blanda*	5	☑	FAC
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	5	= Total Cover	

Woody Vine Stratum (Plot size: 30'r)		
1.	0	☐
2.	0	☐
3.	0	☐
4.	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: 6 (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	20	**x 2 =**	40	
FAC species	25	**x 3 =**	75	
FACU species	55	**x 4 =**	220	
UPL species	0	**x 5 =**	0	
Column Totals:	100	**(A)**	335	**(B)**

Prevalence Index = B/A = 3.350

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

Photos provided in Appendix D.

No hydrophytic vegetation indicators present.

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

Soil

Sampling Point: **upl-bl-20200107-03**

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
0-6	10YR	2/2	95	7.5YR	4/6	5	C	M	Silt Loam	
6-16	10YR	6/1	60						Silty Clay Loam	
	10YR	5/8	40							

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 redox features in low chroma and low value matrix of upper layer, as well as low chroma and high value matrix with no redox features in lower layer.

Based on site investigation, this location is not in a wetland as it does not meet hydrology or hydrophytic vegetation criteria.

Upland RLP-15ab

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-bl-20200107-02

Investigator(s): B Leopold, R Massa | Section, Township, Range: S. | T. 2N | R. 1W

Landform (hillslope, terrace, etc.): Flat | Local relief (concave, convex, none): none | Slope: 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.1007 | Long.: -80.59616 | Datum: NAD83

Soil Map Unit Name: JtB - Jimtown loam, 2 to 6 percent slopes | NWI classification: n/a

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

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

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

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

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes ( )	No (●)	Is the Sampled Area within a Wetland? Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks: (Explain alternative procedures here or in a separate report.)

Data point upl-bl-20200107-02 is point out associated with wetland w-bl-20200107-02 (PEM/SS). Point out located about 10' east of PSS boundary in upland woods.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☑ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes ( )	No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):	Wetland Hydrology Present? Yes ( ) No (●)

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

Remarks:

No primary hydrology indicators present.

Upland RLP-15ab

VEGETATION - Use scientific names of plants

Sampling Point: **upl-bl-20200107-02**

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus rubra*	40	☑	FACU
2. *Quercus palustris*	15	☑	FACW
3. *Fagus grandifolia*	10	☐	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Ulmus americana*	15	☑	FACW
2. *Acer rubrum*	5	☐	FAC
3. *Smilax glauca*	5	☐	FACU
4. *Lindera benzoin*	10	☑	FACW
5.	0	☐	
6.	0	☐	
7.	0	☐	
	35	= Total Cover	
Herb Stratum (Plot size: 5' r)			
1. *Carex blanda*	5	☑	FAC
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	5	= Total Cover	
Woody Vine Stratum (Plot size: 30'r)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	40	x 2 =	80	
FAC species	10	x 3 =	30	
FACU species	55	x 4 =	220	
UPL species	0	x 5 =	0	
Column Totals:	105	(A)	330	(B)

Prevalence Index = B/A = 3.143

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Photos provided in Appendix D.

Hydrophytic vegetation present via Dominance Test indicator, though location does not pass Prevalence Index indicator.

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

Soil

Sampling Point: **upl-bl-20200107-02**

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
0-5	10YR	3/2	100						Silt Loam	
5-15	2.5Y	6/6	60						Silty Clay	
	10YR	6/2	40							

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 in soil profile due to absence of redox features in low chroma and low value matrix of upper layer.

Based on site investigation, this location is not in a wetland as it does not meet hydrology or hydric soil criteria.

Upland RLP-16abc

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 06-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-bl-20200106-03

Investigator(s): B Leopold, R Massa | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.09959 | Long.: -80.59586 | Datum: NAD83

Soil Map Unit Name: JtB - Jimtown loam, 2 to 6 percent slopes | NWI classification: N/A

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

Are Vegetation [ ], Soil [ ], or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

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

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

Hydrophytic Vegetation Present?	Yes (●) No ( )	Is the Sampled Area within a Wetland? Yes ( ) No (●)
Hydric Soil Present?	Yes ( ) No (●)	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks: (Explain alternative procedures here or in a separate report.)

Data point upl-bl-20200106-03 is point out associated with wetland w-bl-20200106-02 (PFO/SS). Point out located across cleared ROW in upland wood lot similar to PFO component point in (w-bl-20200106-02a).

Hydrology

Wetland Hydrology Indicators:

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

- [ ] Surface Water (A1)
- [x] High Water Table (A2)
- [x] 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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [ ] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( ) No (●)	Depth (inches):	
Water Table Present?	Yes (●) No ( )	Depth (inches):	9
Saturation Present? (includes capillary fringe)	Yes (●) No ( )	Depth (inches):	4

Wetland Hydrology Present? Yes (●) No ( )

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

Remarks:

Hydrology indicators present as high water table and saturated soils. Data point is located in a topographic position similar to wetland data points w-bl-20200106-02a (PFO) and w-bl-20200106-02c (PSS disturbed vegetation), thereby with possible equivalent soil saturation parameters.

Upland RLP-16abc

VEGETATION - Use scientific names of plants

Sampling Point: **upl-bl-20200106-03**

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	30	☑	FAC
2. *Acer saccharum*	10	☐	FACU
3. *Quercus rubra*	20	☑	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Fagus grandifolia*	15	☑	FACU
2. *Acer rubrum*	10	☑	FAC
3. *Hamamelis virginiana*	5	☐	FACU
4. *Rhamnus cathartica*	5	☐	FAC
5. *Cornus alba*	3	☐	FACW
6.	0	☐	
7.	0	☐	
	38	= Total Cover	
Herb Stratum (Plot size: 5' r)			
1. *Dichanthelium dichotomum*	5	☑	FAC
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	5	= Total Cover	
Woody Vine Stratum (Plot size: 30'r)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	3	x 2 =	6	
FAC species	50	x 3 =	150	
FACU species	50	x 4 =	200	
UPL species	0	x 5 =	0	
Column Totals:	103	(A)	356	(B)

Prevalence Index = B/A = 3.456

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.

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Photos provided in Appendix D.

Hydrophytic vegetation present via Dominance Test indicator due to predominance of FAC species, though location does not pass Prevalence Index indicator. Vegetation at this data point is not disturbed.

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

Soil

Sampling Point: **upl-bl-20200106-03**

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
0-10	10YR	3/2	100						Silt Loam	
10-16	2.5Y	4/2	50						Silty Clay Loam	
	2.5Y	5/6	50							

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 in soil profile due to absence of redox features in low chroma and low value matrix of upper layer. Low value and low chroma matrix of lower layer does not exceed 60%.

Based on site investigation, this location is not in a wetland as it does not meet hydric soil criteria. This data point does meet wetland criteria for hydrology and vegetation, indicating this location is in a similar topographic position as wetland w-bl-20200106-02. Saturated soils and high water table likely do not persist in the growing season, resulting in the absence of redox features in the soil profile.

Upland RLP-17abc

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-bl-20200107-01

Investigator(s): B Leopold, R Massa | Section, Township, Range: S. | T. 2N | R. 1W

Landform (hillslope, terrace, etc.): Flat | Local relief (concave, convex, none): convex | Slope: 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.10195 | Long.: -80.59544 | Datum: NAD83

Soil Map Unit Name: JtB - Jimtown loam, 2 to 6 percent slopes | NWI classification: n/a

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

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

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

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

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	Is the Sampled Area within a Wetland? Yes ( ) No (●)
Wetland Hydrology Present?	Yes ( )	No (●)	

Remarks: (Explain alternative procedures here or in a separate report.)

Data point upl-bl-20200107-01 is point out associated with wetland w-bl-20200107-01 (PEM/SS/FO). Point out located about 20' west of PFO boundary in forested-shrub undisturbed area.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes ( )	No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):	Wetland Hydrology Present? Yes ( ) No (●)

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

Remarks:

No hydrology indicators present.

Upland RLP-17abc

VEGETATION - Use scientific names of plants

Sampling Point: **upl-bl-20200107-01**

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	50	☑	FAC
2. *Acer saccharum*	20	☑	FACU
3. *Ulmus americana*	10	☐	FACW
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	80	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' r)			
1. *Acer rubrum*	30	☑	FAC
2. *Hamamelis virginiana*	10	☑	FACU
3. *Rosa multiflora*	5	☐	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	45	= Total Cover	

Herb Stratum (Plot size: 5' r)			
1. *Carex frankii*	10	☑	OBL
2. *Scirpus atrovirens*	3	☐	OBL
3. *Carex blanda*	5	☑	FAC
4. *Persicaria virginiana*	5	☑	FAC
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	23	= Total Cover	

Woody Vine Stratum (Plot size: 30'r)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 71.4% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	13	**x 1 =**	13	
FACW species	10	**x 2 =**	20	
FAC species	90	**x 3 =**	270	
FACU species	35	**x 4 =**	140	
UPL species	0	**x 5 =**	0	
Column Totals:	148	**(A)**	443	**(B)**

Prevalence Index = B/A = 2.993

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Photos provided in Appendix D.

Hydrophytic vegetation present via Dominance Test and Prevalence Index indicators. Herbaceous vegetation limited to small depression area in woodlot.

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

Soil

Sampling Point: **upl-bl-20200107-01**

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
0-7	2.5Y	4/1	95	2.5Y	7/6	5	C	PL	Silty Clay Loam	
7-11	2.5Y	4/1	40	10YR	6/6	30	C	M	Silty Clay	
				2.5Y	6/1	30	D	M		

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 prominent redox features in matrix of low chroma and low value throughout soil profile.

Based on site investigation, this location is not in a wetland as it does not meet hydrology criteria. Presence of hydrophytic vegetation and hydric soil indicators consistent with location of data point close to wetland w-bl-20200107-01 boundary.

Upland RLP-18ab

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-aeh-20200107-12

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 1W

Landform (hillslope, terrace, etc.): Hillside | Local relief (concave, convex, none): none | Slope: 3.0 % / 0.0 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.091855 | Long.: -80.603004 | Datum: WGS 84

Soil Map Unit Name: JuB-Jimtown loam, til substratum, 2 to 6 percent slopes | NWI classification: NA

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, et

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: (Explain alternative procedures here or in a separate report.)

Upland was taken south of the wetland.

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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [ ] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes ( )	No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):	Wetland Hydrology Present? Yes ( ) No (●)

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

Remarks:

No wetland hydrology was present.

Upland RLP-18ab

VEGETATION - Use scientific names of plant

Sampling Point: **upl-aeh-20200107-12**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	25	☑	FAC
2. *Acer negundo*	15	☑	FAC
3. *Fagus grandifolia*	15	☑	FACU
4. *Ulmus rubra*	5	☐	FAC
5. *Quercus palustris*	5	☐	FACW
6.	0	☐	
7.	0	☐	
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft)			
1. *Acer negundo*	15	☑	FAC
2. *Fagus grandifolia*	10	☑	FACU
3. *Ulmus rubra*	5	☐	FAC
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	30	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	5	**x 2 =**	10	
FAC species	65	**x 3 =**	195	
FACU species	25	**x 4 =**	100	
UPL species	0	**x 5 =**	0	
Column Totals:	95	**(A)**	305	**(B)**

Prevalence Index = B/A = 3.211

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the upland area.

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

Sampling Point: **upl-aeh-20200107-12**

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	3/2	100						Silty Clay Loam	
6-18	10YR	4/2	100						Silty 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 soils were present within this upland area.

Upland RLP-19ab

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-aeh-20200107-13

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 1W

Landform (hillslope, terrace, etc.): Hillside | Local relief (concave, convex, none): none | Slope: 5.0 % / 0.0 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.091195 | Long.: -80.602498 | Datum: WGS 84

Soil Map Unit Name: RuB-Rittman-Urban land complex, 2 to 6 percent slopes | NWI classification: NA

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, et

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: (Explain alternative procedures here or in a separate report.)

Upland was taken south of the wetland.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

No wetland hydrology was present.

Upland RLP-19ab

VEGETATION - Use scientific names of plant

Sampling Point: **upl-aeh-20200107-13**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft)			
1. *Populus deltoides*	5	☑	FAC
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	5	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. *Phalaris arundinacea*	40	☑	FACW
2. *Schedonorus arundinaceus*	25	☑	FACU
3. *Solidago canadensis*	10	☐	FACU
4. *Symphyotrichum ericoides*	10	☐	FACU
5. *Poa pratensis*	10	☐	FACU
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	95	= Total Cover	
Woody Vine Stratum (Plot size: 30ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	40	x 2 =	80	
FAC species	5	x 3 =	15	
FACU species	55	x 4 =	220	
UPL species	0	x 5 =	0	
Column Totals:	100	(A)	315	(B)

Prevalence Index = B/A = 3.150

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the upland area.

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

Soil

Sampling Point: **upl-aeh-20200107-13**

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	100						Silty Clay Loam	
6-18	10YR	4/2	85	10YR	6/4	15	C	M	Silty 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Depleted matrix was met within this upland area.

Upland RLP-20

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-aeh-20200107-05

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 1W

Landform (hillslope, terrace, etc.): Hillside | Local relief (concave, convex, none): concave | Slope: 4.0 % / 0.0 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.090876 | Long.: -80.608731 | Datum: WGS 84

Soil Map Unit Name: RuB-Rittman-Urban land complex, 2 to 6 percent slopes | NWI classification: NA

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, et

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: (Explain alternative procedures here or in a separate report.)

Upland was taken southeast of an existing wetland.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

No wetland hydrology was present.

Upland RLP-20

VEGETATION - Use scientific names of plant

Sampling Point: **upl-aeh-20200107-05**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Prunus serotina*	20	☑	FACU
2. *Quercus palustris*	5	☐	FACW
3. *Acer rubrum*	35	☑	FAC
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	60	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	25	☑	FAC
2. *Fagus grandifolia*	5	☐	FACU
3. *Quercus palustris*	10	☑	FACW
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	40	= Total Cover	

Herb Stratum (Plot size: 5ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Polystichum acrostichoides*	0	☐	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	0	= Total Cover	

Woody Vine Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	15	x 2 =	30	
FAC species	60	x 3 =	180	
FACU species	25	x 4 =	100	
UPL species	0	x 5 =	0	
Column Totals:	100	(A)	310	(B)

Prevalence Index = B/A = 3.100

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the upland area.

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

Soil

Sampling Point: **upl-aeh-20200107-05**

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
0-10	10YR	3/2	100						Silty Clay Loam	
10-18	10YR	4/2	97	10YR	5/4	3	C	M	Silty 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)
- ☑ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Depleted below a dark surface and depleted matrix were met within the upland area.

Upland RLP-21ab

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-aeh-20200107-06

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.090846 | Long.: -80.609803 | Datum: WGS 84

Soil Map Unit Name: RuB-Rittman-Urban land complex, 2 to 6 percent slopes | NWI classification: NA

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, et

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: (Explain alternative procedures here or in a separate report.)

Upland was taken southeast of the existing wetland.

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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [ ] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes ( )	No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):	Wetland Hydrology Present? Yes ( ) No (●)

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

Remarks:

No wetland hydrology was present.

Upland RLP-21ab

VEGETATION - Use scientific names of plant

Sampling Point: **upl-aeh-20200107-06**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus rubra*	5	☑	FAC
2. *Acer rubrum*	5	☑	FAC
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft)			
1. *Rosa multiflora*	25	☑	FACU
2. *Acer rubrum*	15	☑	FAC
3. *Ulmus rubra*	5	☐	FAC
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	45	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. *Solidago canadensis*	15	☑	FACU
2. *Glechoma hederacea*	15	☑	FACU
3. *Poa pratensis*	10	☑	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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: 7 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 42.9% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	**x 1 =**	0	
FACW species	0	**x 2 =**	0	
FAC species	30	**x 3 =**	90	
FACU species	65	**x 4 =**	260	
UPL species	0	**x 5 =**	0	
Column Totals:	95	**(A)**	350	**(B)**

Prevalence Index = B/A = 3.684

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the upland area.

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

Sampling Point: **upl-aeh-20200107-06**

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
0-18	10YR 4/2	100					Silty 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 soils were met within the upland area.

Upland RLP-22

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-aeh-20200107-07

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 1W

Landform (hillslope, terrace, etc.): Hillside | Local relief (concave, convex, none): concave | Slope: 5.0 % / 0.0 °

Subregion (LRR or MLRA): LRR K | Lat.: 41.090147 | Long.: -80.610691 | Datum: WGS 84

Soil Map Unit Name: RuB-Rittman-Urban land complex, 2 to 6 percent slopes | NWI classification: NA

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, et

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: (Explain alternative procedures here or in a separate report.)

Upland was taken southeast of an existing wetland.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

No wetland hydrology was present.

Upland RLP-22

VEGETATION - Use scientific names of plant

Sampling Point: **upl-aeh-20200107-07**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Prunus serotina*	45	☑	FACU
2. *Ulmus rubra*	10	☐	FAC
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	55	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft)			
1. *Ulmus rubra*	10	☑	FAC
2. *Acer rubrum*	10	☑	FAC
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	20	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. *Glechoma hederacea*	10	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	10	= Total Cover	
Woody Vine Stratum (Plot size: 30ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	30	x 3 =	90	
FACU species	55	x 4 =	220	
UPL species	0	x 5 =	0	
Column Totals:	85	(A)	310	(B)

Prevalence Index = B/A = 3.647

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the upland area.

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

Sampling Point: **upl-aeh-20200107-07**

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
0-6	10YR	4/1	100						Silty Clay Loam	
6-18	10YR	4/1	87	10YR	5/4	10	D	M	Silty Clay Loam	
				10YR	5/6	3	C	M		

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Depleted matrix was met for this upland area.

Upland RLP-23

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project City/County: Mahoning County Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company State: OH Sampling Point: upl-aeh-20200107-08

Investigator(s): AEH, SKM Section, Township, Range: S. T. 2N R. 1W

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): concave Slope: 10.0 % / 0.0 °

Subregion (LRR or MLRA): LRR K Lat.: 41.082545 Long.: -80.610788 Datum: WGS 84

Soil Map Unit Name: CoC-Chili-Urban land complex, rolling NWI classification: NA

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, et

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: (Explain alternative procedures here or in a separate report.)

Upland was taken west of wetland and stream complex on the hillside.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

No wetland hydrology was present.

Upland RLP-23

VEGETATION - Use scientific names of plant

Sampling Point: **upl-aeh-20200107-08**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Carya ovata*	10	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	10	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft)			
1. *Rosa multiflora*	20	☑	FACU
2. *Quercus alba*	15	☑	FACU
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	35	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. *Schedonorus arundinaceus*	5	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	5	= Total Cover	
Woody Vine Stratum (Plot size: 30ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is > 50%
- ☐ Prevalence Index is ≤3.0 [1]
- ☐ Morphological Adaptations [1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation [1] (Explain)

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

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the upland area.

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

Soil

Sampling Point: **upl-aeh-20200107-08**

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	2/1	100						Silty Clay Loam	
4-18	10YR	5/4	100						Silty 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 soils were present within the upland area.

Upland RLP-24

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-aeh-20200107-09

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.081772 | Long.: -80.611189 | Datum: WGS 84

Soil Map Unit Name: CoC-Chili-Urban land complex, rolling | NWI classification: NA

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, et

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: (Explain alternative procedures here or in a separate report.)

Upland was taken between two wetland complexes.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ○	No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

No wetland hydrology was present.

Upland RLP-24

VEGETATION - Use scientific names of plant

Sampling Point: **upl-aeh-20200107-09**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	40	☑	FAC
2. *Prunus serotina*	10	☐	FACU
3. *Ulmus rubra*	5	☐	FAC
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	55	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. *Solidago canadensis*	15	☑	FACU
2. *Rosa multiflora*	15	☑	FACU
3. *Plantago lanceolata*	5	☐	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	35	= Total Cover	
Woody Vine Stratum (Plot size: 30ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	45	x 3 =	135	
FACU species	45	x 4 =	180	
UPL species	0	x 5 =	0	
Column Totals:	90	(A)	315	(B)

Prevalence Index = B/A = 3.500

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is > 50%
- ☐ Prevalence Index is ≤3.0 [1]
- ☐ Morphological Adaptations [1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation [1] (Explain)

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

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the upland area.

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

Soil

Sampling Point: **upl-aeh-20200107-09**

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
0-18	10YR	3/2	100						Silty 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 soils were present within the upland area.

Upland RLP-26

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-aeh-20200107-10

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 1W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.081510 | Long.: -80.613088 | Datum: WGS 84

Soil Map Unit Name: Ua-Udorthents, loamy, 2 to 25 percent slopes | NWI classification: NA

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, et

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: (Explain alternative procedures here or in a separate report.)

Upland was taken south of the wetland, adjacent to an existing parking pad.

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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [ ] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes ( )	No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):	Wetland Hydrology Present? Yes ( ) No (●)

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

Remarks:

No wetland hydrology was present.

Upland RLP-26

VEGETATION - Use scientific names of plant

Sampling Point: **upl-aeh-20200107-10**

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Herb Stratum (Plot size:)			
1. *Poa pratensis*	25	☑	FACU
2. *Solidago canadensis*	15	☑	FACU
3. *Bromus inermis*	10	☑	UPL
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	50	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	**x 1 =**	0
FACW species	0	**x 2 =**	0
FAC species	0	**x 3 =**	0
FACU species	40	**x 4 =**	160
UPL species	10	**x 5 =**	50
Column Totals:	50 **(A)**		210 **(B)**

Prevalence Index = B/A = 4.200

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the upland area.

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

Soil

Sampling Point: **upl-aeh-20200107-10**

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						Silty Clay Loam	50% fill

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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: concrete/rocks

Depth (inches): 3

Hydric Soil Present? **Yes** ○ **No** ◉

Remarks:

No hydric soils were present within the upland area. Refusal at 3 inches by concrete. Soil is disturbed from adjacent parking pad.

Upland RLP-27

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project | City/County: Mahoning County | Sampling Date: 07-Jan-20

Applicant/Owner: ATSI, a FirstEnergy Company | State: OH | Sampling Point: upl-aeh-20200107-03

Investigator(s): AEH, SKM | Section, Township, Range: S. | T. 2N | R. 2W

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

Subregion (LRR or MLRA): LRR K | Lat.: 41.088665 | Long.: -80.638127 | Datum: WGS 84

Soil Map Unit Name: Ua-Udorthents, loamy, 2 to 25 percent slopes | NWI classification: NA

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, et

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: (Explain alternative procedures here or in a separate report.)

Upland was taken northeast of a wetland on a disturbed berm.

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)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] 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 2 required)

- [ ] Surface Soil Cracks (B6)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [ ] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ( )	No (●)	Depth (inches):	
Water Table Present?	Yes ( )	No (●)	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):	Wetland Hydrology Present? Yes ( ) No (●)

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

Remarks:

No hydrology indicators present.

Upland RLP-27

VEGETATION - Use scientific names of plant

Sampling Point: **upl-aeh-20200107-03**

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft)			
1. *Fagus grandifolia*	10	☑	FACU
2. *Malus pumila*	10	☑	UPL
3. *Populus deltoides*	5	☑	FAC
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	25	= Total Cover	
Herb Stratum (Plot size: 5ft)			
1. *Solidago canadensis*	20	☑	FACU
2. *Bromus inermis*	10	☑	UPL
3. *Oxalis corniculata*	5	☐	FACU
4. *Daucus carota*	5	☐	UPL
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	40	= Total Cover	
Woody Vine Stratum (Plot size: 30ft)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 20.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	**x 1 =**	0	
FACW species	0	**x 2 =**	0	
FAC species	5	**x 3 =**	15	
FACU species	35	**x 4 =**	140	
UPL species	25	**x 5 =**	125	
Column Totals:	65	**(A)**	280	**(B)**

Prevalence Index = B/A = 4.308

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.

Definitions of Vegetation Strata

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

Vegetation was disurbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the upland area.

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

Soil

Sampling Point: **upl-aeh-20200107-03**

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
0-18	10YR	2/1	100						Silty 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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 soils present.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project **City/County:** Mahoning **Sampling Date:** 20-Aug-20

Applicant/Owner: FirstEnergy **State:** Ohio **Sampling Point:** **Upland RLP-28**

Investigator(s): M.R.Kline, L.H.Jacks **Section, Township, Range: S.** **T.** 2N **R.** 1W

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** convex **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR R **Lat.:** 41.101088 **Long.:** -80.594166 **Datum:** WGS84

Soil Map Unit Name: JtB; Jimtown loam, 2 to 6 percent slopes **NWI classification:** NA

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

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

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

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	**Is the Sampled Area within a Wetland?**	Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉		
Wetland Hydrology Present?	Yes ○ No ◉		

Remarks: (Explain alternative procedures here or in a separate report.)

Upland data point for Wetland RLP-28 located in a mature forested dominated by Acer rubrum. Vegetation meets hydrophytic criteria, but hydric soils and hydrology were not observed. The field identificaiton number for this sample point is W-200820-MRK-001 UPL.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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):	0	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	0	**Wetland Hydrology Present?** Yes ○ No ◉

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

NA

Remarks:

No source of hydrology was observed.

VEGETATION - Use scientific names of plants

Sampling Point: Upland RLP-28

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	75	☑	FAC
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	75	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Acer rubrum*	25	☑	FAC
2. *Smilax rotundifolia*	20	☑	FAC
3. *Lindera benzoin*	10	☐	FACW
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	55	= Total Cover	

Herb Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	0	= Total Cover	

Woody Vine Stratum (Plot size: None)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	10	x 2 =	20	
FAC species	120	x 3 =	360	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	130	(A)	380	(B)

Prevalence Index = B/A = 2.923

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.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ◉ No ○

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

Eventhough the sample point passes for a dominance of hydrophytic vegetation, the convex landscape prevents consistent hydrology from precipitation to collect and develop hydric soils.

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

Soil

Sampling Point: Upland RLP-28

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	10R	3/2	100					Silt Loam	
3-14	2.5Y	6/3	100					Silt 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Due to the lack of hydric soils and hydrology, the mature forested located adjacent to Wetland RLP-28 that is situated on a convex landscape was identified does not meet the federal definition of a wetland.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project **City/County:** Mahoning **Sampling Date:** 06-Oct-20

Applicant/Owner: ATSI, a FirstEnergy Company **State:** Ohio **Sampling Point:** **Wetland 29 UPL**

Investigator(s): Brian Miller **Section, Township, Range: S.** **T.** 2N **R.** 1W

Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** none **Slope:** 5.0 % / 2.9 °

Subregion (LRR or MLRA): LRR R **Lat.:** 41.096313 **Long.:** -80.611935 **Datum:** NAD83

Soil Map Unit Name: Dekalb very stony loam, 25 to 50 percent slopes - DkF **NWI classification:** N/A

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

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

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

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

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?**	Yes ○ No ◉
Hydric Soil Present?	Yes ◉ No ○		
Wetland Hydrology Present?	Yes ○ No ◉		

Remarks: (Explain alternative procedures here or in a separate report.)

An upland representative to a Wetland RLP-29a/b, a PEM/PSS wetland complex, located on a forested hillside. The field identification number associated with this sample point is W-2020-10-06-BJM-001 UPL.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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):	0
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	0

Wetland Hydrology Present? Yes ○ No ◉

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

N/A

Remarks:

No sources of hydrology were observed.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland 29 UPL

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	25	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	25	**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Herb Stratum (Plot size: 5ft radius)			
1. *Dactylis glomerata*	65	☑	FACU
2. *Verbesina alternifolia*	15	☐	FACW
3. *Solidago rugosa*	10	☐	FAC
4. *Persicaria virginiana*	5	☐	FAC
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	95	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	15	x 3 =	45
FACU species	90	x 4 =	360
UPL species	0	x 5 =	0
Column Totals:	120 (A)		435 (B)

Prevalence Index = B/A = 3.625

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.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ○ No ◉

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

A dominance of hydrophytic vegetation was not observed along the hillside adjacent to the wetland/stream complex.

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

Soil

Sampling Point: Wetland 29 UPL

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]	Loc²	Texture	Remarks
0-18	10YR	4/1	70	10YR	5/4	20	C	M	Loam	large rocks and fill
				10YR	4/3	10	C	M	Loam	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

The sample point displayed fill material from the asphalt base of Oak Street Extension that has been deposited downslope via runoff. Due to the lack of hydorlogy, hydrophytic vegetation, and hydric soils, the sample point located adjacent to the stream and wetland complex was not identified as meeting the criteria for a wetland.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project **City/County:** Mahoning **Sampling Date:** 06-Oct-20

Applicant/Owner: ATSI, a FirstEnergy Company **State:** Ohio **Sampling Point:** **Wetland RLP-30/31 UPL**

Investigator(s): Brian Miller **Section, Township, Range: S.** **T.** 2N **R.** 1W

Landform (hillslope, terrace, etc.): Valley **Local relief (concave, convex, none):** flat **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR R **Lat.:** 41.095273 **Long.:** -80.612737 **Datum:** NAD83

Soil Map Unit Name: Chargin Loam - Ck **NWI classification:** N/A

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

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

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

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

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?**	Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉		
Wetland Hydrology Present?	Yes ○ No ◉		

Remarks: (Explain alternative procedures here or in a separate report.)

A upland sample point located in a mixed deciduous forest along the edge of a perennial stream and serves as upland reference to Wetland RLP-30 and Wetland RLP-31. The field identificaiton number associated with this sample point is W-2020-10-06-BJM-002/003.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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):	0	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	0	**Wetland Hydrology Present?** Yes ○ No ◉

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

N/A

Remarks:

Only geomorphic position was observed as a secondary indicator for wetland hydrology.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland RLP-30/31 UPL

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Platanus occidentalis*	20	☑	FACW
2. *Prunus serotina*	20	☑	FACU
3. *Acer saccharum*	15	☑	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	55	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 15ft radius)			
1. *Acer saccharum*	15	☑	FACU
2. *Robinia pseudoacacia*	10	☑	FACU
3. *Prunus serotina*	5	☐	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	30	**= Total Cover**	
Herb Stratum (Plot size: 5ft radius)			
1. *Poa pratensis*	5	☑	FACU
2. *Agrimonia striata*	5	☑	FACU
3. *Persicaria virginiana*	5	☑	FAC
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	15	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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: 8 (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	5	x 3 =	15	
FACU species	75	x 4 =	300	
UPL species	0	x 5 =	0	
Column Totals:	100	(A)	355	(B)

Prevalence Index = B/A = 3.550

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.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ○ No ◉

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

A dominance of hydrophytic vegetation was not observed within the stream valley adjacent to Stream RLP-13.

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

Soil

Sampling Point: Wetland RLP-30/31 UPL

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					Loam	
3-18	10YR	5/4	100					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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Due to the lack of hydorlogy, hydrophytic vegetation, and hydric soils, the sample point located adjacent to the stream a

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project **City/County:** Mahoning **Sampling Date:** 06-Oct-20

Applicant/Owner: ATSI, a FirstEnergy Company **State:** Ohio **Sampling Point:** **Wetland RLP-32 UPL**

Investigator(s): Brian Miller **Section, Township, Range: S.** **T.** 2N **R.** 1W

Landform (hillslope, terrace, etc.): Valley **Local relief (concave, convex, none):** none **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR R **Lat.:** 41.101088151 **Long.:** -80.594166257 **Datum:** NAD83

Soil Map Unit Name: Chargin Loam - Ck **NWI classification:** N/A

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

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

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

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

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?**	Yes ○ No ◉
Hydric Soil Present?	Yes ◉ No ○		
Wetland Hydrology Present?	Yes ○ No ◉		

Remarks: (Explain alternative procedures here or in a separate report.)

An upland representative of an open ,owned field within a residential park area and serves as upland reference to Wetland RLP-32, a PFO wetland. The field identification number of the sample point was W-2020-10-06-BJM-004 UPL.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ 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):	0	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	0	**Wetland Hydrology Present?** Yes ○ No ◉

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

Remarks:

No sources of hydrology were observed.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland RLP-32 UPL

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Herb Stratum (Plot size: 5ft radius)			
1. *Dactylis glomerata*	35	☑	FACU
2. *Poa pratensis*	25	☑	FACU
3. *Taraxacum officinale*	15	☐	FACU
4. *Plantago major*	10	☐	FACU
5. *Galium aparine*	10	☐	FACU
6. *Trifolium pratense*	10	☐	FACU
7. *Geum canadense*	5	☐	FAC
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	110	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	5	x 3 =	15	
FACU species	105	x 4 =	420	
UPL species	0	x 5 =	0	
Column Totals:	110	(A)	435	(B)

Prevalence Index = B/A = 3.955

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.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in 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: Wetland RLP-32 UPL

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					Loam	
3-8	10YR	5/2	100					Loamy Sand	many fine gravel particles.

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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: rock and gravel

Depth (inches): 8

Hydric Soil Present? Yes ◉ No ○

Remarks:

The samplempoint is located in a restored parking lot that was previous gravel and the color of the soil profile was attributed to the fine gravel and not the result of inundation. As a precautionary measure, the depleted matrix indicator was selected. However and due to the absence of hydrology and dominance of hydrophytic vegetation, the area failed to meet the criteria of a wetland.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project **City/County:** Mahoning **Sampling Date:** 15-Nov-22

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **UPL-MRK-001**

Investigator(s): MRK, RBL **Section, Township, Range: S.** **T.** 2N **R.** 2W

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** convex **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR R **Lat.:** 41.103916 **Long.:** -80.661227 **Datum:** NAD83

Soil Map Unit Name: Ua: Udorthents, loamy, 2 to 25 percent slopes **NWI classification:** NA

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

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

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

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

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?**	Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉		
Wetland Hydrology Present?	Yes ○ No ◉		

Remarks: (Explain alternative procedures here or in a separate report.)

Upland data point collected at Mahoning River to characterize the area. Area is located on the floodplain of the river which is surrounded by industrial properties.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	**Wetland Hydrology Present?** Yes ○ No ◉

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

NA

Remarks:

No source of hydrology was observed.

VEGETATION - Use scientific names of plants

Sampling Point: UPL-MRK-001

Tree Stratum (Plot size: 30' radius)	**Absolute % Cover**	**Dominant Species?**	**Indicator Status**
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Herb Stratum (Plot size: 5' radius)			
1. *Reynoutria japonica*	100	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	100	**= Total Cover**	
Woody Vine Stratum (Plot size: 30' radius)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	100	x 4 =	400	
UPL species	0	x 5 =	0	
Column Totals:	100	(A)	400	(B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **Morphological Adaptations** [1] **(Provide supporting data in Remarks or on a separate sheet)**
- ☐ **Problematic Hydrophytic Vegetation** [1] **(Explain)**

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

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ○ No ◉

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

Vegetation does not meet hydrophytic criteria.

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

Soil

Sampling Point: UPL-MRK-001

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
0-18	10YR	3/3	100					Silt 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Soil does not meet hydric criteria.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project **City/County:** Mahoning **Sampling Date:** 15-Nov-22

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **UPL-MRK-002**

Investigator(s): MRK, RBL **Section, Township, Range: S.** **T.** 2N **R.** 2W

Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** convex **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR R **Lat.:** 41.089468 **Long.:** -80.635023 **Datum:** NAD83

Soil Map Unit Name: Ua: Udorthents, loamy, 2 to 25 percent slopes **NWI classification:** NA

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

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

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

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

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?**	Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉		
Wetland Hydrology Present?	Yes ○ No ◉		

Remarks: (Explain alternative procedures here or in a separate report.)

Upland data point collected at Mahoning River to characterize the area. Area is located on the floodplain of the river which is surrounded by industrial properties.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	**Wetland Hydrology Present?** Yes ○ No ◉

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

NA

Remarks:

No source of hydrology was observed.

VEGETATION - Use scientific names of plants

Sampling Point: UPL-MRK-002

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Platanus occidentalis*	25	☑	FACW
2. *Populus deltoides*	10	☑	FAC
3. *Prunus serotina*	5	☐	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	40	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Lonicera morrowii*	30	☑	FACU
2. *Acer negundo*	5	☐	FAC
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	35	**= Total Cover**	
Herb Stratum (Plot size: 5' radius)			
1. *Reynoutria japonica*	60	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	60	**= Total Cover**	
Woody Vine Stratum (Plot size: 30' radius)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	15	x 3 =	45
FACU species	95	x 4 =	380
UPL species	0	x 5 =	0
Column Totals:	135 (A)		475 (B)

Prevalence Index = B/A = 3.519

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.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ○ No ◉

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

Vegetation does not meet hydrophytic criteria.

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

Soil

Sampling Point: UPL-MRK-002

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
0-18	10YR	3/3	100					Silt 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Soil does not meet hydric criteria.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project **City/County:** Mahoning **Sampling Date:** 15-Nov-22

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **UPL-MRK-003**

Investigator(s): MRK, RBL **Section, Township, Range: S.** **T.** 2N **R.** 2W

Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** convex **Slope:** 2.0 % / 1.1 °

Subregion (LRR or MLRA): LRR R **Lat.:** 41.098992 **Long.:** -80.658319 **Datum:** NAD83

Soil Map Unit Name: CoB: Chili-Urban land complex, undulating **NWI classification:** NA

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

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

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

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

Hydrophytic Vegetation Present? Yes ○ No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present? Yes ○ No ◉	
Wetland Hydrology Present? Yes ○ No ◉	

Remarks: (Explain alternative procedures here or in a separate report.)

Upland data point collected to characterize the area. Upland was collected in an industrial area with landscaped areas surrounding local buildings.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	**Wetland Hydrology Present?** Yes ○ No ◉

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

NA

Remarks:

No source of hydrology was observed.

VEGETATION - Use scientific names of plants

Sampling Point: UPL-MRK-003

Tree Stratum (Plot size: 30' radius)	**Absolute % Cover**	**Dominant Species?**	**Indicator Status**
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Rhus typhina*	25	☑	UPL
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	25	**= Total Cover**	
Herb Stratum (Plot size: 5' radius)			
1. *Solidago canadensis*	50	☑	FACU
2. *Lotus corniculatus*	50	☑	FACU
3. *Dactylis glomerata*	10	☐	FACU
4. *Dipsacus fullonum*	10	☐	FACU
5. *Taraxacum officinale*	5	☐	FACU
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	125	**= Total Cover**	
Woody Vine Stratum (Plot size: 30' radius)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	125	x 4 =	500	
UPL species	25	x 5 =	125	
Column Totals:	150	(A)	625	(B)

Prevalence Index = B/A = 4.167

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.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ○ No ◉

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

Vegetation does not meet hydrophytic criteria.

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

Soil

Sampling Point: UPL-MRK-003

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
0-10	10YR	3/3	100					Silt Loam	30% mixed rock

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Soil does not meet hydric criteria.Shovel refusal at 10 inches due to rock.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project **City/County:** Mahoning **Sampling Date:** 17-Jun-24

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **UPL-MRK-004**

Investigator(s): MRK, TJK **Section, Township, Range: S.** **T.** 2N **R.** 2W

Landform (hillslope, terrace, etc.): Bench **Local relief (concave, convex, none):** convex **Slope:** 2.0 % / 1.1 °

Subregion (LRR or MLRA): LRR R **Lat.:** 41.092583 **Long.:** -80.652528 **Datum:** NAD83

Soil Map Unit Name: CoC: Chili-Urban land complex, rolling **NWI classification:** NA

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

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

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

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

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?**	Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉		
Wetland Hydrology Present?	Yes ○ No ◉		

Remarks: (Explain alternative procedures here or in a separate report.)

Upland data point collected to characterize the area in a landscaped lot adjacent to the highway.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	**Wetland Hydrology Present?** Yes ○ No ◉

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

NA

Remarks:

No source of hydrology was observed.

VEGETATION - Use scientific names of plants

Sampling Point: UPL-MRK-004

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Rhus typhina*	20	☑	UPL
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	20	= Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. *Dactylis glomerata*	80	☑	FACU
2. *Trifolium repens*	20	☐	FACU
3. *Achillea millefolium*	15	☐	FACU
4. *Solidago canadensis*	10	☐	FACU
5. *Apocynum cannabinum*	5	☐	FAC
6. *Cirsium arvense*	5	☐	FACU
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	135	= Total Cover	
Woody Vine Stratum (Plot size: 30' radius)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	130	x 4 =	520
UPL species	20	x 5 =	100
Column Totals:	155 (A)		635 (B)

Prevalence Index = B/A = 4.097

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.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ○ No ◉

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

Vegetation does not meet hydrophytic criteria.

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

Soil

Sampling Point: UPL-MRK-004

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
0-8	10YR	3/3	100					Silt Loam	30% mixed rock

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Soil does not meet hydric criteria. Shovel refusal occurred at 8 inches due to rock.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project **City/County:** Mahoning **Sampling Date:** 17-Jun-24

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland RLP-33-UPL**

Investigator(s): MRK, TJK **Section, Township, Range: S.** **T.** 2N **R.** 2W

Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** convex **Slope:** 2.0 % / 1.1 °

Subregion (LRR or MLRA): LRR R **Lat.:** 41.091665 **Long.:** -80.616169 **Datum:** NAD83

Soil Map Unit Name: RuB: Rittman-Urban land complex, 2 to 6 percent slopes **NWI classification:** NA

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

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

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

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

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?**	Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉		
Wetland Hydrology Present?	Yes ○ No ◉		

Remarks: (Explain alternative procedures here or in a separate report.)

Upland data point for W-MRK-001. Upland data was collected within a woodland area.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	**Wetland Hydrology Present?** Yes ○ No ◉

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

NA

Remarks:

No source of hydrology was observed.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland RLP-33-UPL

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	60	☑	FACU
2. *Prunus serotina*	10	☐	FACU
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	70	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Lonicera morrowii*	18	☑	FACU
2. *Acer saccharum*	15	☑	FACU
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	33	**= Total Cover**	
Herb Stratum (Plot size: 5' radius)			
1. *Podophyllum peltatum*	25	☑	FACU
2. *Toxicodendron radicans*	20	☑	FAC
3. *Parthenocissus quinquefolia*	10	☐	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	55	**= Total Cover**	
Woody Vine Stratum (Plot size: 30' radius)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 20.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	138	x 4 =	552
UPL species	0	x 5 =	0
Column Totals:	158 (A)		612 (B)

Prevalence Index = B/A = 3.873

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.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ○ No ◉

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

Vegetation does not meet hydrophytic criteria.

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

Soil

Sampling Point: Wetland RLP-33-UPL

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
0-16	10YR	3/3	100					Silt 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Soil does not meet hydric criteria.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Youngstown 138kV Reinforcement Project **City/County:** Mahoning **Sampling Date:** 20-Sep-24

Applicant/Owner: FirstEnergy **State:** OH **Sampling Point:** **Wetland RLP-34-UPL**

Investigator(s): MRK **Section, Township, Range: S.** **T.** 2N **R.** 2W

Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** convex **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR R **Lat.:** 41.085436 **Long.:** -80.633750 **Datum:** NAD83

Soil Map Unit Name: Ua: Udorthents, loamy, 2 to 25 percent slopes **NWI classification:** NA

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

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

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

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

Hydrophytic Vegetation Present?	Yes ○ No ◉	**Is the Sampled Area within a Wetland?**	Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉		
Wetland Hydrology Present?	Yes ○ No ◉		

Remarks: (Explain alternative procedures here or in a separate report.)

Upland data point for W-MRK-002. Upland data was collected within a landscaped field surrounded by scrub/shrub.

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)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ 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 2 required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○ No ◉	Depth (inches):	
Water Table Present?	Yes ○ No ◉	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	**Wetland Hydrology Present?** Yes ○ No ◉

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

NA

Remarks:

No source of hydrology was observed.

VEGETATION - Use scientific names of plants

Sampling Point: Wetland RLP-34-UPL

Tree Stratum (Plot size: 30' radius)	**Absolute % Cover**	**Dominant Species?**	**Indicator Status**
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Populus tremuloides*	20	☑	FACU
2. *Rosa multiflora*	5	☑	FACU
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	25	**= Total Cover**	
Herb Stratum (Plot size: 5' radius)			
1. *Solidago canadensis*	75	☑	FACU
2. *Poa pratensis*	60	☑	FACU
3. *Lotus corniculatus*	20	☐	FACU
4. *Apocynum cannabinum*	5	☐	FAC
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	160	**= Total Cover**	
Woody Vine Stratum (Plot size: 30' radius)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	5	x 3 =	15	
FACU species	180	x 4 =	720	
UPL species	0	x 5 =	0	
Column Totals:	185	(A)	735	(B)

Prevalence Index = B/A = 3.973

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.**

Definitions of Vegetation Strata:

Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ○ No ◉

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

Vegetation does not meet hydrophytic criteria.

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

Soil

Sampling Point: Wetland RLP-34-UPL

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type [1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR 5/3	100					Silt Loam	50% mixed rock and shale

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L, M)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ 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:

Soil does not meet hydric criteria. Shovel refusal at 10 inches due to rock. Soil is compacted and mixed with rock and shale from past construction.

APPENDIX B

OEPA WETLAND ORAM FORMS

Background Information

Name:	YOUNGSTOWN 138KV REINFORCEMENT PROJECT
Date:	January 6-8, August 20, October 06, November 3, 2020, March 11, 2021, November 15, 2022, June 17, September 20, December 12, 2024
Affiliation:	AECOM Technical Services, Incorporated
Address:	525 Vine Street, Suite 1800, Cincinnati, OH 45202
Phone Number:	1-513-419-3450
e-mail address:	jake.lubbers@aecom.com
Name of Wetland:	Wetland RLP-01, 02, 03, 04, 05, 06, 07, 08a/b, 09a/b, 10, 11, 12, 13, 14, 15a/b, 16a/b/c, 17a/b/c, 18a/b, 19a/b, 20, 21a/b, 22, 23, 24, 25, 26, 27, 28, 29a/b, 30, 31, 32, 33, 34
Vegetation Communit(ies):	PEM/PSS/PFO (see Table 2 for complete designations)
HGM Class(es):	Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

See Figure 1, 2, and 3 of Wetland Delineation and Stream Assessment Report. The first 10-page form of this attachment is representative of all delineated wetlands and all subsequent wetlands are represented by a four-page form.

Lat/Long or UTM Coordinate	See Table 2
USGS Quad Name	Youngstown and Campbell, Ohio
County	Mahoning
Township	City of Youngstown
Section and Subsection	
Hydrologic Unit Code	Dry Run-Mahoning River (050301030807) and Crab Creek (050301030804)
Site Visit	January 6-8, August 20, October 06, November 3, 2020, March 11, 2021, November 15, 2022, June 17, September 20, December 12, 2024
National Wetland Inventory Map	See Figure 2
Ohio Wetland Inventory Map	See Figure 2
Soil Survey	See Figure 2
Delineation report/map	See Figure 3

Name of Wetland: RLP-01, 02, 03, 04, 05, 06, 07, 08a/b, 09a/b, 10, 11, 12, 13, 14, 15a/b, 16a/b/c, 17 a/b/c, 18a/b, 19a/b, 20, 21a/b, 22, 23, 24, 25, 26, 27, 28, 29a/b, 30, 31, 32, 33, 34	
Wetland Size (acres, hectares):	See Table 2

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

See Figure 1, 2, and 3 of Wetland Delineation and Stream Assessment Report

Comments, Narrative Discussion, Justification of Category Changes:

See Appendix A: USACE Wetland Delineation Data Forms for Description of Wetlands

Final score :	**Category:**

all RLP wetlands

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland.* In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Unit if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a mitigation site, conservation site, etc.	x	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	x	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	x	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	x	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		x
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.		x

all RLP wetlands

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is a legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Reynoldsburg Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	(NO) Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	(NO) Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	(NO) Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	(NO) Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis*, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	(NO) Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	(NO) Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is the saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	(NO) Go to Question 8a

all RLP wetlands

#	Question	Circle one	
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	(NO) Go to Question 8b
8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	(NO) Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	(NO) Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 9d	(NO) Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	(NO) Go to Question 9d
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	(NO) Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	(NO) Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	(NO) Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio, Erie County, and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	(NO) Complete Quantitative Rating

all RLP wetlands

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Wetland RLP-01

Site: Youngstown 138kV Reinforcement Project	Rater(s): Audrey Hanner	Date: 1/8/2020

Field Id:

w-aeh-20200108-01

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)

0.17 acres

Metric 2. Upland buffers and surrounding land use.

1 | 2 (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)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

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

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

Metric 3. Hydrology.

5.0 | 7.0 (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)
- [ ] 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)
- [x] Recent or no recovery (1)

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

4 | 11 (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)
- [ ] Poor to fair (2)
- [x] Poor (1)

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

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

Check all disturbances observed

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

11

subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland RLP-01

Site: Youngstown 138kV Reinforcement Project	Rater(s): Audrey Hanner	Date: 1/8/2020

Field Id:
w-aeh-20200108-01

	11
	subtotal this page
0	11
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

-4	7
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

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

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

Wetland RLP-01

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	1	
	Metric 2. Buffers and surrounding land use	1	
	Metric 3. Hydrology	5	
	Metric 4. Habitat	4	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	-4	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.ohio.gov/dsw/401/index.aspx to determine the wetland's category based on its quantitative score	7	Category based on score breakpoints Category 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Wetland RLP-01

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	(YES) Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	(NO)	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Wetland RLP-02

Site: Youngstown 138kV Reinforcement Project	Rater(s): J. Lubbers; J. Tucker	Date: 1/6/2020

Field Id: **w-jbl-20200106-01**

Metric 1. Wetland Area (size).

0 (max 6 pts) | 0 (subtotal)

Select one size class and assign score.

0.07 acres

- [ ] >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)

Metric 2. Upland buffers and surrounding land use.

8 (max 14 pts.) | 8 (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.

12.0 (max 30 pts.) | 20.0 (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)
- [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)
- [x] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

12 (max 20 pts.) | 32 (subtotal)

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

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

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

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [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)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [x] selective cutting
- [ ] woody debris removal
- [x] toxic pollutants
- [ ] 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 RLP-02

Site: Youngstown 138kV Reinforcement Project	Rater(s): J. Lubbers; J. Tucker	Date: 1/6/2020

Field Id:
w-jbl-20200106-01

	32 subtotal this page
0 max 10 pts.	**32** 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)

6 max 20pts.	**38** subtotal

Metric 6. Plant communities, interspersion, microtopography.

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)
x	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer Table 1 ORAM long form for list. Add or deduct points for coverage

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

6d. Microtopography.

Score all present using 0 to 3 scale.

1	Vegetated hummucks/tussucks
2	Coarse woody debris >15cm (6in)
1	Standing dead >25cm (10in) dbh
	Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's 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 2

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

Wetland RLP-02

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	8	
	Metric 3. Hydrology	12	
	Metric 4. Habitat	12	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	6	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.ohio.gov/dsw/401/index.aspx to determine the wetland's category based on its quantitative score	38	Category based on score breakpoints Category 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Wetland RLP-02

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	(YES) Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	(NO)	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	(Category 2)	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Wetland ID:	Wetland RLP-03

Site:	Youngstown 138kV Reinforcement Project	Rater(s):	J. Lubbers; J. Tucker; B. Miller	Date:	1/7 and 10/6/2020

Field ID:

W-JBL-20200107-02

Delineated acres:	1.35
Total acres:	2.00

Metric 1. Wetland Area (size).

2.0 (max 6 pts) | 2.0 (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)

Metric 2. Upland buffers and surrounding land use.

5.0 (max 14 pts.) | 7.0 (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.

9.0 (max 30 pts.) | 16.0 (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)
- [x] 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)
- [x] 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

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

Metric 4. Habitat Alteration and Development.

7.0 (max 20 pts.) | 23.0 (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)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

23.0 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	Wetland RLP-03

Site:	Youngstown 138kV Reinforcement Project	Rater(s):	J. Lubbers; J. Tucker; B. Miller	Date:	1/7 and 10/6/2020

Field ID:

W-JBL-20200107-02

23.0
subtotal this page

0.0 **23.0** **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)

4.0 **27.0** **Metric 6. Plant communities, interspersion, microtopography.**

max 20pts. subtotal

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

	Aquatic bed
	Emergent
1	Shrub
	Forest
	Mudflats
	Open water
	Other_____

6b. horizontal (plan view) Interspersion.

Select only one.

	High (5)
	Moderately high(4)
	Moderate (3)
x	Moderately low (2)
	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer Table 1 ORAM long form for list. Add or deduct points for coverage

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

6d. Microtopography.

Score all present using 0 to 3 scale.

1	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 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but 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

27.0 **TOTAL (Max 100 pts)**

1 **Category**

Wetland ID:	Wetland RLP-03

ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1 Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	*NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	2		
	Metric 2. Buffers and surrounding land use	5		
	Metric 3. Hydrology	9		
	Metric 4. Habitat	7		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	4		
	TOTAL SCORE	27		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID:	Wetland RLP-03

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	***NO**	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	***NO**	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	***NO**	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	***YES** Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	***NO**	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	***NO** Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	***Category 1**	Category 2	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

Wetland RLP-04

Site	Rater(s):	Date:
Youngstown 138kV Reinforcement Project	J. Lubbers; J. Tucker	1/7/2020

Field Id: **w-jbl-20200107-01**

Metric 1. Wetland Area (size).

0 (max 6 pts) | 0 (subtotal)

Select one size class and assign score.

0.04 acres

- [ ] >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)

Metric 2. Upland buffers and surrounding land use.

4 (max 14 pts.) | 4 (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)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [x] 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 (max 30 pts.) | 14.0 (subtotal)

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

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] Precipitation (1)
- [x] 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)
- [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)
- [x] 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)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

5 (max 20 pts.) | 19 (subtotal)

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

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

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

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

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

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

Check all disturbances observed

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

19 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland RLP-04

Site: Youngstown 138kV Reinforcement Project	Rater(s): J. Lubbers; J. Tucker	Date: 1/7/2020

Field Id:
w-jbl-20200107-01

19
subtotal this page

0 | 19 — 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)
- [ ] 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

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

Wetland RLP-04

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	4	
	Metric 3. Hydrology	10	
	Metric 4. Habitat	5	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	2	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.ohio.gov/dsw/401/index.aspx to determine the wetland's category based on its quantitative score	21	Category based on score breakpoints Category 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Wetland RLP-04

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	(YES) Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	(NO)	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Wetland RLP-05

Site: Youngstown 138kV Reinforcement Project	Rater(s): J. Lubbers; J. Tucker	Date: 1/7/2020

Field Id: **w-jbl-20200107-03**

Metric 1. Wetland Area (size).

1 (max 6 pts) | 1 (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
extends outside SC

Metric 2. Upland buffers and surrounding land use.

5 (max 14 pts.) | 6 (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.

10.5 (max 30 pts.) | 16.5 (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)
- [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.

- [x] Semi- to permanently inundated/saturated (4)
- [x] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [ ] 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
- [x] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [x] road bed/RR track
- [ ] dredging
- [x] Other: garbage dumping

Metric 4. Habitat Alteration and Development.

8 (max 20 pts.) | 24.5 (subtotal)

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

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

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

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [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)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

24.5 subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland RLP-05

Site: Youngstown 138kV Reinforcement Project	Rater(s): J. Lubbers; J. Tucker	Date: 1/7/2020

Field Id:
w-jbl-20200107-03

24.5 subtotal this page

0 max 10 pts. | **24.5** 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)

0 max 20pts. | **24.5** 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

- [ ] 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.

- [1] 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

Category 1

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

Wetland RLP-05

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	1	
	Metric 2. Buffers and surrounding land use	5	
	Metric 3. Hydrology	10.5	
	Metric 4. Habitat	8	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	0	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.ohio.gov/dsw/401/index.aspx to determine the wetland's category based on its quantitative score	24.5	Category based on score breakpoints Category 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Wetland RLP-05

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	(YES) Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	(NO)	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Wetland RLP-06

Site: Youngstown 138kV Reinforcement Project	Rater(s): J. Lubbers; J. Tucker	Date: 1/7/2020

Field Id: **w-jbl-20200107-04**

0 | 0 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)
- [ ] 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)

0.03 acres

5 | 5 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)
- [ ] 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)

9.0 | 14.0 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.

- [ ] 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)
- [x] 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
- [x] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [x] road bed/RR track
- [ ] dredging
- [x] Other: garbage dumping

9 | 23 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)
- [ ] 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

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

23

subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland RLP-06

Site: Youngstown 138kV Reinforcement Project	Rater(s): J. Lubbers; J. Tucker	Date: 1/7/2020

Field Id:
w-jbl-20200107-04

	23 subtotal this page
0 max 10 pts.	**23** 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 max 20pts.	**26** subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

	Aquatic bed
	Emergent
1	Shrub
	Forest
	Mudflats
	Open water
	Other_____

6b. horizontal (plan view) Interspersion.

Select only one.

	High (5)
	Moderately high(4)
	Moderate (3)
x	Moderately low (2)
	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer Table 1 ORAM long form for list. Add or deduct points for coverage

	Extensive >75% cover (-5)
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.

1	Vegetated hummucks/tussucks
1	Coarse woody debris >15cm (6in)
1	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 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but 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)**

Wetland RLP-06

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	5	
	Metric 3. Hydrology	9	
	Metric 4. Habitat	9	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	3	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.ohio.gov/dsw/401/index.aspx to determine the wetland's category based on its quantitative score	26	Category based on score breakpoints Category 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Wetland RLP-06

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	(YES) Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	(NO)	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Wetland RLP-07

Site: Youngstown 138kV Reinforcement Project	Rater(s): J. Lubbers; J. Tucker	Date: 1/7/2020

Field Id: **w-jbl-20200107-05**

Metric 1. Wetland Area (size).

2 (max 6 pts) | 2 (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)

0.55 acres
extends outside SC

Metric 2. Upland buffers and surrounding land use.

11 (max 14 pts.) | 13 (subtotal)

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

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

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

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [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 (max 30 pts.) | 21.0 (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)
- [x] 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

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

Metric 4. Habitat Alteration and Development.

8 (max 20 pts.) | 29 (subtotal)

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

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

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

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [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)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

29 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland RLP-07

Site: Youngstown 138kV Reinforcement Project	Rater(s): J. Lubbers; J. Tucker	Date: 1/7/2020

Field Id:
w-jbl-20200107-05

	29 subtotal this page
0 max 10 pts.	**29** 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 max 20pts.	**31** subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

	Aquatic bed
	Emergent
1	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

	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.

1	Vegetated hummucks/tussucks
1	Coarse woody debris >15cm (6in)
1	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 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but 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 2

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

Wetland RLP-07

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	2	
	Metric 2. Buffers and surrounding land use	11	
	Metric 3. Hydrology	8	
	Metric 4. Habitat	8	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	2	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.ohio.gov/dsw/401/index.aspx to determine the wetland's category based on its quantitative score	31	Category based on score breakpoints Category 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Wetland RLP-07

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	(NO)	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	(YES) Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	(Category 2)	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Wetland RLP-08ab

Site	Youngstown 138kV Reinforcement Project	Rater(s): JTT, JBL	Date: 1/7/2020

Field Id:
w-jbl-20200107-06ab

Metric 1. Wetland Area (size).

2 (max 6 pts) | 2 (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)

0.35 acres
extends outside SC

Metric 2. Upland buffers and surrounding land use.

11 (max 14 pts.) | 13 (subtotal)

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

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

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

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [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.

11.0 (max 30 pts.) | 24.0 (subtotal)

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

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

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [x] 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)
- [x] 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
- [ ] point source (nonstormwater)
- [x] filling/grading
- [x] road bed/RR track
- [ ] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

8 (max 20 pts.) | 32 (subtotal)

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

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

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

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [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)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [x] selective cutting
- [ ] woody debris removal
- [x] 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 RLP-08ab

Site	Rater(s):	Date:
Youngstown 138kV Reinforcement Project	JTT, JBL	1/7/2020

Field Id:
w-jbl-20200107-06ab

	32
	subtotal this page
0	32
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

4	36
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
1	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

	Extensive >75% cover (-5)
	Moderate 25-75% cover (-3)
x	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
2	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 2

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

Wetland RLP-08ab

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	2	
	Metric 2. Buffers and surrounding land use	11	
	Metric 3. Hydrology	11	
	Metric 4. Habitat	8	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	4	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.ohio.gov/dsw/401/index.aspx to determine the wetland's category based on its quantitative score	36	Category based on score breakpoints Category 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Wetland RLP-08ab

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	(YES) Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	(NO)	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	(Category 2)	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Wetland RLP-09ab

Site	Youngstown 138kV Reinforcement Project	Rater(s): Bill Leopold (AECOM)	Date:	1/8/2020

Field Id:
w-bl-20200108-02ab

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)

0.06 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.

10.0 | 18.0 (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)
x	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)
x	Seasonally inundated (2)
	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

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

Metric 4. Habitat Alteration and Development.

11 | 29 (max 20 pts. | subtotal)

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

	None or none apparent (4)
x	Recovered (3)
	Recovering (2)
	Recent or no recovery (1)

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

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

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

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

Check all disturbances observed

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

29 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland RLP-09ab

Site: Youngstown 138kV Reinforcement Project	Rater(s): Bill Leopold (AECOM)	Date: 1/8/2020

Field Id:
w-bl-20200108-02ab

29 subtotal this page

0 (max 10 pts.) | 29 (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.) | 33 (subtotal)

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [0] Emergent
- [1] 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

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [x] 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
- [1] Coarse woody debris >15cm (6in)
- [1] Standing dead >25cm (10in) dbh
- [1] 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 2

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

Wetland RLP-09ab

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	8	
	Metric 3. Hydrology	10	
	Metric 4. Habitat	11	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	4	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.ohio.gov/dsw/401/index.aspx to determine the wetland's category based on its quantitative score	33	Category based on score breakpoints Category 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Wetland RLP-09ab

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	NO	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	NO	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Wetland RLP-10

Site: Youngstown 138kV Reinforcement Project	Rater(s): Bill Leopold (AECOM)	Date: 1/8/2020

Field Id:

Metric 1. Wetland Area (size).

w-bl-20200108-01

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)

0.18 acres
extends outside SC

Metric 2. Upland buffers and surrounding land use.

max 14 pts.	subtotal	
9	10	

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.

- [x] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] 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	
13.0	23.0	

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

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] Precipitation (1)
- [x] 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)
- [x] 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)
- [x] Seasonally inundated (2)
- [ ] 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

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

Metric 4. Habitat Alteration and Development.

max 20 pts.	subtotal	
13	36	

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

- [x] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

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

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [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)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

36
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland RLP-10

Site: Youngstown 138kV Reinforcement Project	Rater(s): Bill Leopold (AECOM)	Date: 1/8/2020

Field Id:
w-bl-20200108-01

	36
	subtotal this page
0	**36**
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)

5	**41**
max 20pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [0] Emergent
- [1] 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

- [ ] 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)
- [1] 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 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but 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 2

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

Wetland RLP-10

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	1	
	Metric 2. Buffers and surrounding land use	9	
	Metric 3. Hydrology	13	
	Metric 4. Habitat	13	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	5	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.ohio.gov/dsw/401/index.aspx to determine the wetland's category based on its quantitative score	41	Category based on score breakpoints Category 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Wetland RLP-10

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	(YES) Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	(NO)	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	(Category 2)	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Wetland RLP-11

Site: Youngstown 138kV Reinforcement Project	Rater(s): Bill Leopold (AECOM)	Date: 1/7/2020

Field Id:
w-bl-20200107-05

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)

0.01 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.

13.0 | 21.0 (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)
- [ ] Between stream/lake and other human use (1)
- [x] 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)
- [x] Seasonally inundated (2)
- [ ] 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)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

13 | 34 (max 20 pts. | subtotal)

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

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

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

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

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

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

Check all disturbances observed

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

34
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland RLP-11

Site: Youngstown 138kV Reinforcement Project	Rater(s): Bill Leopold (AECOM)	Date: 1/7/2020

Field Id:
w-bl-20200107-05

	34 subtotal this page
0 max 10 pts.	**34** 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 max 20pts.	**37** 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.

- [1] 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 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but 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 2

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

Wetland RLP-11

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	8	
	Metric 3. Hydrology	13	
	Metric 4. Habitat	13	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	3	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.ohio.gov/dsw/401/index.aspx to determine the wetland's category based on its quantitative score	37	Category based on score breakpoints Category 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Wetland RLP-11

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	(YES) Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	(NO)	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	(Category 2)	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Wetland RLP-12

Site: Youngstown 138kV Reinforcement Project	Rater(s): Bill Leopold (AECOM)	Date: 1/7/2020

Field Id: **w-bl-20200107-04**

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)

0.03 acres

Metric 2. Upland buffers and surrounding land use.

6 | 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.

- [x] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] 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.

13.0 | 19.0 (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)
- [ ] Between stream/lake and other human use (1)
- [x] 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)
- [x] Seasonally inundated (2)
- [ ] 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)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

7 | 26 (max 20 pts. | subtotal)

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

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

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

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [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
- [ ] clearcutting
- [x] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

26 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland RLP-12

Site: Youngstown 138kV Reinforcement Project	Rater(s): Bill Leopold (AECOM)	Date: 1/7/2020

Field Id:
w-bl-20200107-04

	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 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but 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)**

Wetland RLP-12

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	6	
	Metric 3. Hydrology	13	
	Metric 4. Habitat	7	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	2	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.ohio.gov/dsw/401/index.aspx to determine the wetland's category based on its quantitative score	28	Category based on score breakpoints Category 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Wetland RLP-12

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	NO	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	NO	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Wetland RLP-13

Site: Youngstown 138kV Reinforcement Project	Rater(s): Bill Leopold (AECOM)	Date: 1/6/2020

Field Id: **w-bl-20200106-01**

Metric 1. Wetland Area (size).

2 | 2 (max 6 pts | subtotal)

Select one size class and assign score.

0.31 acres

- [ ] >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)

Metric 2. Upland buffers and surrounding land use.

8 | 10 (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.

12.0 | 22.0 (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)
- [ ] Between stream/lake and other human use (1)
- [x] 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)
- [x] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

9 | 31 (max 20 pts. | subtotal)

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

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

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

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [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
- [ ] selective cutting
- [x] woody debris removal
- [ ] toxic pollutants
- [x] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

31 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland RLP-13

Site: Youngstown 138kV Reinforcement Project	Rater(s): Bill Leopold (AECOM)	Date: 1/6/2020

Field Id:
w-bl-20200106-01

	31 subtotal this page
0 max 10 pts.	**31** 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)

6 max 20pts.	**37** subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

	Aquatic bed
0	Emergent
1	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.

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

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but 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 2

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

Wetland RLP-13

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	2	
	Metric 2. Buffers and surrounding land use	8	
	Metric 3. Hydrology	12	
	Metric 4. Habitat	9	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	6	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.ohio.gov/dsw/401/index.aspx to determine the wetland's category based on its quantitative score	37	Category based on score breakpoints Category 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Wetland RLP-13

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	NO	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	NO	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Wetland RLP-14

Site: Youngstown 138kV Reinforcement Project	Rater(s): Bill Leopold (AECOM)	Date: 1/7/2020

Field Id: **w-bl-20200107-03**

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)

0.36 acres

Metric 2. Upland buffers and surrounding land use.

9 | 11 (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.

- [x] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] 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.

13.0 | 24.0 (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)
- [ ] Between stream/lake and other human use (1)
- [x] 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)
- [x] Seasonally inundated (2)
- [ ] 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)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

16 | 40 (max 20 pts. | subtotal)

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

- [x] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

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

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [x] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

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

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

Check all disturbances observed

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

40 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland RLP-14

Site: Youngstown 138kV Reinforcement Project	Rater(s): Bill Leopold (AECOM)	Date: 1/7/2020

Field Id:
w-bl-20200107-03

	40
	subtotal this page
0	**40**
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)

5	**45**
max 20pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

	Aquatic bed
	Emergent
	Shrub
2	Forest
	Mudflats
	Open water
	Other_____

6b. horizontal (plan view) Interspersion.

Select only one.

	High (5)
	Moderately high(4)
	Moderate (3)
	Moderately low (2)
	Low (1)
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.

1	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 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but 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 2

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

Wetland RLP-14

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	2	
	Metric 2. Buffers and surrounding land use	9	
	Metric 3. Hydrology	13	
	Metric 4. Habitat	16	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	5	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.ohio.gov/dsw/401/index.aspx to determine the wetland's category based on its quantitative score	45	Category based on score breakpoints Category 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Wetland RLP-14

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	NO	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	NO	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Wetland RLP-15ab

Site: Youngstown 138kV Reinforcement Project	Rater(s): Bill Leopold (AECOM)	Date: 1/7/2020

Field Id: **w-bl-20200107-02ab**

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)

0.24 acres

Metric 2. Upland buffers and surrounding land use.

8 | 9 — 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.

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

Metric 3. Hydrology.

13.0 | 22.0 — 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)
	Between stream/lake and other human use (1)
x	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)
x	Seasonally inundated (2)
	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)
	Recovering (3)
	Recent or no recovery (1)

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

11 | 33 — max 20 pts. | subtotal

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

	None or none apparent (4)
x	Recovered (3)
	Recovering (2)
	Recent or no recovery (1)

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

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

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

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

Check all disturbances observed

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

33 — subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland RLP-15ab

Site: Youngstown 138kV Reinforcement Project	Rater(s): Bill Leopold (AECOM)	Date: 1/7/2020

Field Id:
w-bl-20200107-02ab

	33
	subtotal this page
0	**33**
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

4	**37**
max 20pts.	subtotal

Metric 6. Plant communities, 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)
x	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer Table 1 ORAM long form for list. Add or deduct points for coverage

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

6d. Microtopography.

Score all present using 0 to 3 scale.

1	Vegetated hummucks/tussucks
0	Coarse woody debris >15cm (6in)
0	Standing dead >25cm (10in) dbh
1	Amphibian breeding pools

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but 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 2

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

Wetland RLP-15ab

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	1	
	Metric 2. Buffers and surrounding land use	8	
	Metric 3. Hydrology	13	
	Metric 4. Habitat	11	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	4	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.ohio.gov/dsw/401/index.aspx to determine the wetland's category based on its quantitative score	37	Category based on score breakpoints Category 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Wetland RLP-15ab

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	(YES) Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	(NO)	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	(Category 2)	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Wetland RLP-16abc

Site: Youngstown 138kV Reinforcement Project	Rater(s): Bill Leopold (AECOM)	Date: 1/6/2020

Field Id: **w-bl-20200106-02**

Metric 1. Wetland Area (size).

3 (max 6 pts) | 3 (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)

6.04 acres
extends outside SC

Metric 2. Upland buffers and surrounding land use.

7 (max 14 pts.) | 10 (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)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [x] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

12.0 (max 30 pts.) | 22.0 (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)
- [ ] Between stream/lake and other human use (1)
- [x] 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)
- [x] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

9 (max 20 pts.) | 31 (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)
- [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)
- [ ] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

31 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland RLP-16abc

Site: Youngstown 138kV Reinforcement Project	Rater(s): Bill Leopold (AECOM)	Date: 1/6/2020

Field Id:
w-bl-20200106-02

	31 subtotal this page
0 max 10 pts.	**31** 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)

9 max 20pts.	**40** subtotal

Metric 6. Plant communities, interspersion, microtopography.

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)
x	Nearly absent <5% cover (0)
	Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

1	Vegetated hummucks/tussucks
1	Coarse woody debris >15cm (6in)
0	Standing dead >25cm (10in) dbh
2	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 2

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

Wetland RLP-16abc

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	3	
	Metric 2. Buffers and surrounding land use	7	
	Metric 3. Hydrology	12	
	Metric 4. Habitat	9	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	9	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.ohio.gov/dsw/401/index.aspx to determine the wetland's category based on its quantitative score	40	Category based on score breakpoints Category 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Wetland RLP-16abc

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	(YES) Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	(NO)	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Wetland RLP-17abc

Site: Youngstown 138kV Reinforcement Project	Rater(s): Bill Leopold (AECOM)	Date: 1/7/2020

Field Id: **w-bl-20200107-01abc**

Metric 1. Wetland Area (size).

2 | 2 (max 6 pts | subtotal)

Select one size class and assign score.

1.08 acres

- [ ] >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)

Metric 2. Upland buffers and surrounding land use.

8 | 10 (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.

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

Metric 3. Hydrology.

13.0 | 23.0 (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)
- [x] 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)
- [x] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

11.5 | 34.5 (max 20 pts. | subtotal)

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

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

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

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [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
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

34.5 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland RLP-17abc

Site: Youngstown 138kV Reinforcement Project	Rater(s): Bill Leopold (AECOM)	Date: 1/7/2020

Field Id:
w-bl-20200107-01abc

34.5 subtotal this page

0 max 10 pts. | **34.5** 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)

11 max 20pts. | **45.5** subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

	Aquatic bed
2	Emergent
0	Shrub
1	Forest
	Mudflats
	Open water
	Other_____

6b. horizontal (plan view) Interspersion.

Select only one.

	High (5)
	Moderately high(4)
x	Moderate (3)
	Moderately low (2)
	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer Table 1 ORAM long form for list. Add or deduct points for coverage

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

6d. Microtopography.

Score all present using 0 to 3 scale.

1	Vegetated hummucks/tussucks
2	Coarse woody debris >15cm (6in)
1	Standing dead >25cm (10in) dbh
1	Amphibian breeding pools

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but 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 2

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

Wetland RLP-17abc

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	2	
	Metric 2. Buffers and surrounding land use	8	
	Metric 3. Hydrology	13	
	Metric 4. Habitat	11.5	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	11	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.ohio.gov/dsw/401/index.aspx to determine the wetland's category based on its quantitative score	45.5	Category based on score breakpoints Category 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Wetland RLP-17abc

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	(YES) Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	(NO)	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	(Category 2)	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Wetland RLP-18ab

Site: Youngstown 138kV Reinforcement Project	Rater(s): Audrey Hanner	Date: 1/7/2020

Field Id: **w-aeh-20200107-09ab**

2	**2**	**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)
- [ ] 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)

1.06 acres
extends outside SC

8	**10**	**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)

11.0	**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.

- [ ] 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)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

12	**33**	**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)
- [ ] 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)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] 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

33
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland RLP-18ab

Site: Youngstown 138kV Reinforcement Project	Rater(s): Audrey Hanner	Date: 1/7/2020

Field Id:
w-aeh-20200107-09ab

33 subtotal this page

0 max 10 pts. | **33** 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)

6 max 20pts. | **39** subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

	Aquatic bed
1	Emergent
	Shrub
1	Forest
	Mudflats
	Open water
	Other_____

6b. horizontal (plan view) Interspersion.

Select only one.

	High (5)
	Moderately high(4)
	Moderate (3)
x	Moderately low (2)
	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer Table 1 ORAM long form for list. Add or deduct points for coverage

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's 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 2

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

Wetland RLP-18ab

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	2	
	Metric 2. Buffers and surrounding land use	8	
	Metric 3. Hydrology	11	
	Metric 4. Habitat	12	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	6	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.ohio.gov/dsw/401/index.aspx to determine the wetland's category based on its quantitative score	39	Category based on score breakpoints Category 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Wetland RLP-18ab

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	(YES) Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	(NO)	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	(Category 2)	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Wetland RLP-19ab

Site: Youngstown 138kV Reinforcement Project	Rater(s): Audrey Hanner	Date: 1/7/2020

Field Id: **w-aeh-20200107-10ab**

Metric 1. Wetland Area (size).

2 (subtotal) **2** — max 6 pts

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)

1.18 acres
extends outside SC

Metric 2. Upland buffers and surrounding land use.

8 (subtotal) **10** — max 14 pts.

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.

11.0 (subtotal) **21.0** — max 30 pts.

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)
- [x] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

12 (subtotal) **33** — max 20 pts.

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

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

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

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [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)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] 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

33 subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland RLP-19ab

Site: Youngstown 138kV Reinforcement Project	Rater(s): Audrey Hanner	Date: 1/7/2020

Field Id:
w-aeh-20200107-10ab

	33 subtotal this page
0 max 10 pts.	**33** 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)

8 max 20pts.	**41** subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

	Aquatic bed
1	Emergent
1	Shrub
1	Forest
	Mudflats
	Open water
	Other_____

6b. horizontal (plan view) Interspersion.

Select only one.

	High (5)
	Moderately high(4)
x	Moderate (3)
	Moderately low (2)
	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer Table 1 ORAM long form for list. Add or deduct points for coverage

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's 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 2

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

Wetland RLP-19ab

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	2	
	Metric 2. Buffers and surrounding land use	8	
	Metric 3. Hydrology	11	
	Metric 4. Habitat	12	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	8	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.ohio.gov/dsw/401/index.aspx to determine the wetland's category based on its quantitative score	41	Category based on score breakpoints Category 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Wetland RLP-19ab

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	(YES) Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	(NO)	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Wetland RLP-20

Site: Youngstown 138kV Reinforcement Project	Rater(s): Audrey Hanner	Date: 1/7/2020

Field Id:
w-aeh-20200107-02

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)

0.31 acres
extends outside SC

Metric 2. Upland buffers and surrounding land use.

8	10
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.

15.0	25.0
max 30 pts.	subtotal

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] Precipitation (1)
- [x] 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)
- [x] Seasonally inundated (2)
- [ ] 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)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [x] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [x] road bed/RR track
- [ ] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

9	34
max 20 pts.	subtotal

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [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

- [ ] mowing
- [ ] grazing
- [x] clearcutting
- [x] selective cutting
- [ ] woody debris removal
- [x] toxic pollutants
- [x] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [x] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

34
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland RLP-20

Site: Youngstown 138kV Reinforcement Project	Rater(s): Audrey Hanner	Date: 1/7/2020

Field Id:
w-aeh-20200107-02

	34
	subtotal this page
0	34
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)

8	42
max 20pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

	Aquatic bed
	Emergent
	Shrub
1	Forest
	Mudflats
1	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)
1	Standing dead >25cm (10in) dbh
1	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 2

42	**GRAND TOTAL(max 100 pts)**

Wetland RLP-20

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	2	
	Metric 2. Buffers and surrounding land use	8	
	Metric 3. Hydrology	15	
	Metric 4. Habitat	9	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	8	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.ohio.gov/dsw/401/index.aspx to determine the wetland's category based on its quantitative score	42	Category based on score breakpoints Category 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Wetland RLP-20

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	NO	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	NO	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Wetland RLP-21ab

Site: Youngstown 138kV Reinforcement Project	Rater(s): Audrey Hanner	Date: 1/7/2020

Field Id: **w-aeh-20200107-03**

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)

0.25 acres

Metric 2. Upland buffers and surrounding land use.

8 | 9 — 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.

10.5 | 19.5 — 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)
- [ ] 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)
- [x] 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)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [x] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [x] road bed/RR track
- [ ] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

9 | 28.5 — max 20 pts. | subtotal

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [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

- [ ] mowing
- [ ] grazing
- [x] clearcutting
- [x] selective cutting
- [ ] woody debris removal
- [x] toxic pollutants
- [x] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [x] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

28.5 — subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland RLP-21ab

Site: Youngstown 138kV Reinforcement Project	Rater(s): Audrey Hanner	Date: 1/7/2020

Field Id:
w-aeh-20200107-03

28.5 subtotal this page

0 max 10 pts. | **28.5** 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)

6 max 20pts. | **34.5** 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
1	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)
x	Sparse 5-25% cover (-1)
	Nearly absent <5% cover (0)
	Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

	Vegetated hummucks/tussucks
1	Coarse woody debris >15cm (6in)
1	Standing dead >25cm (10in) dbh
1	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 2

34.5 **GRAND TOTAL(max 100 pts)**

Wetland RLP-21a,b

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	1	
	Metric 2. Buffers and surrounding land use	8	
	Metric 3. Hydrology	10.5	
	Metric 4. Habitat	9	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	6	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.ohio.gov/dsw/401/index.aspx to determine the wetland's category based on its quantitative score	34.5	Category based on score breakpoints Category 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Wetland RLP-21a,b

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	NO	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	NO	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Wetland RLP-22

Site: Youngstown 138kV Reinforcement Project	Rater(s): Audrey Hanner	Date: 1/7/2020

Field Id: **w-aeh-20200107-04**

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)

0.13 acres

Metric 2. Upland buffers and surrounding land use.

8	9
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.

13.0	22.0
max 30 pts.	subtotal

3a. Sources of Water. Score all that apply.

	High pH groundwater (5)
	Other groundwater (3)
x	Precipitation (1)
x	Seasonal/Intermittent surface water (3)
	Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

	100 year floodplain (1)
	Between stream/lake and other human use (1)
	Part of wetland/upland (e.g. forest), complex (1)
	Part of riparian or upland corridor (1)

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)
	Recovering (3)
	Recent or no recovery (1)

Check all disturbances observed

x	ditch		point source (nonstormwater)
	tile	x	filling/grading
	dike	x	road bed/RR track
	weir		dredging
	stormwater input		Other:

Metric 4. Habitat Alteration and Development.

6	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)
	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	x	shrub/sapling removal
	grazing		herbaceous/aquatic bed removal
x	clearcutting	x	sedimentation
x	selective cutting		dredging
	woody debris removal		farming
x	toxic pollutants		nutrient enrichment

28	
subtotal this page	ORAM v. 5.0 Field Form Quantitative Rating

Wetland RLP-22

Site: Youngstown 138kV Reinforcement Project	Rater(s): Audrey Hanner	Date: 1/7/2020

Field Id:
w-aeh-20200107-04

	28
	subtotal this page
0	**28**
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet 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	**26**
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.

- [ ] Vegetated hummucks/tussucks
- [ ] Coarse woody debris >15cm (6in)
- [ ] Standing dead >25cm (10in) dbh
- [ ] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but 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)**

Wetland RLP-22

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	1	
	Metric 2. Buffers and surrounding land use	8	
	Metric 3. Hydrology	13	
	Metric 4. Habitat	6	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	-2	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.ohio.gov/dsw/401/index.aspx to determine the wetland's category based on its quantitative score	26	Category based on score breakpoints Category 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Wetland RLP-22

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	NO	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	NO	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Wetland RLP-23

Site: Youngstown 138kV Reinforcement Project	Rater(s): Audrey Hanner	Date: 1/7/2020

Field Id: **w-aeh-20200107-05**

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)

0.13 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.

14.5	20.5
max 30 pts.	subtotal

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] Precipitation (1)
- [x] 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)
- [x] 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)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [x] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [x] road bed/RR track
- [ ] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

12	32.5
max 20 pts.	subtotal

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [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)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [x] clearcutting
- [x] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [x] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [x] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

32.5

subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland RLP-23

Site: Youngstown 138kV Reinforcement Project	Rater(s): Audrey Hanner	Date: 1/7/2020

Field Id:
w-aeh-20200107-05

	32.5 subtotal this page
0 max 10 pts.	**32.5** 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)

3 max 20pts.	**35.5** subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [1] Emergent
- [ ] Shrub
- [0] 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)
- [x] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- [ ] Vegetated hummucks/tussucks
- [1] Coarse woody debris >15cm (6in)
- [1] Standing dead >25cm (10in) dbh
- [1] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but 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 2

35.5 GRAND TOTAL(max 100 pts)

Wetland RLP-23

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	1	
	Metric 2. Buffers and surrounding land use	5	
	Metric 3. Hydrology	14.5	
	Metric 4. Habitat	12	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	3	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.ohio.gov/dsw/401/index.aspx to determine the wetland's category based on its quantitative score	35.5	Category based on score breakpoints Category 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Wetland RLP-23

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	(YES) Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	(NO)	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Wetland RLP-24

Site: Youngstown 138kV Reinforcement Project	Rater(s): Audrey Hanner	Date: 1/7/2020

Field Id: **w-aeh-20200107-06**

Metric 1. Wetland Area (size).

0 (max 6 pts) | 0 (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.

5 (max 14 pts.) | 5 (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.

14.5 (max 30 pts.) | 19.5 (subtotal)

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] Precipitation (1)
- [x] 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)
- [x] 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)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [x] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [x] road bed/RR track
- [ ] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

11 (max 20 pts.) | 30.5 (subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [x] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [x] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] 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

30.5 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland RLP-24

Site: Youngstown 138kV Reinforcement Project	Rater(s): Audrey Hanner	Date: 1/7/2020

Field Id:
w-aeh-20200107-06

	30.5 subtotal this page
0 max 10 pts.	**30.5** 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)

0 max 20pts.	**30.5** 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)
x	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)
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.

	Vegetated hummucks/tussucks
1	Coarse woody debris >15cm (6in)
	Standing dead >25cm (10in) dbh
	Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but 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 2

30.5 GRAND TOTAL(max 100 pts)

Wetland RLP-24

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	5	
	Metric 3. Hydrology	14.5	
	Metric 4. Habitat	11	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	0	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.ohio.gov/dsw/401/index.aspx to determine the wetland's category based on its quantitative score	30.5	Category based on score breakpoints Category 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Wetland RLP-24

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	(NO)	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	(YES) Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Wetland RLP-25

Site: Youngstown 138kV Reinforcement Project	Rater(s): Audrey Hanner	Date: 1/7/2020

Field Id:

w-aeh-20200107-07

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)

0.03 acres

Metric 2. Upland buffers and surrounding land use.

3 | 3 (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)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [x] 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)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [x] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

10.5 | 13.5 (max 30 pts. | subtotal)

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] Precipitation (1)
- [x] 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)
- [x] 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
- [ ] point source (nonstormwater)
- [x] filling/grading
- [x] road bed/RR track
- [ ] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

7 | 20.5 (max 20 pts. | subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [x] Recovering (2)
- [ ] 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)
- [ ] 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

20.5 (subtotal this page) ORAM v. 5.0 Field Form Quantitative Rating

Wetland RLP-25

Site: Youngstown 138kV Reinforcement Project	Rater(s): Audrey Hanner	Date: 1/7/2020

Field Id:
w-aeh-20200107-07

	20.5 subtotal this page
0 max 10 pts.	**20.5** 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)

-1 max 20pts.	**19.5** 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)
x	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)
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.

	Vegetated hummucks/tussucks
	Coarse woody debris >15cm (6in)
	Standing dead >25cm (10in) dbh
	Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but 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

19.5	**GRAND TOTAL(max 100 pts)**

Wetland RLP-25

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	3	
	Metric 3. Hydrology	10.5	
	Metric 4. Habitat	7	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	-1	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.ohio.gov/dsw/401/index.aspx to determine the wetland's category based on its quantitative score	19.5	Category based on score breakpoints Category 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Wetland RLP-25

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	NO	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	NO	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Wetland RLP-26

Site: Youngstown 138kV Reinforcement Project	Rater(s): Audrey Hanner	Date: 1/7/2020

Field Id:

w-aeh-20200107-08

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)

0.04 acres
extends outside SC

Metric 2. Upland buffers and surrounding land use.

2 | 2 (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)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [x] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

6.0 | 8.0 (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)
- [ ] 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
- [ ] point source (nonstormwater)
- [x] filling/grading
- [x] road bed/RR track
- [ ] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

4 | 12 (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)
- [ ] Poor to fair (2)
- [x] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] 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

12 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland RLP-26

Site: Youngstown 138kV Reinforcement Project	Rater(s): Audrey Hanner	Date: 1/7/2020

Field Id:
w-aeh-20200107-08

	12
	subtotal this page
0	12
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

	Bog (10)
	Fen (10)
	Old growth forest (10)
	Mature forested wetland (5)
	Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
	Lake Erie coastal/tributary wetland-restricted hydrology (5)
	Lake Plain Sand Prairies (Oak Openings) (10)
	Relict Wet Praires (10)
	Known occurrence state/federal threatened or endangered species (10)
	Significant migratory songbird/water fowl habitat or usage (10)
	Category 1 Wetland. See Question 5 Qualitative Rating (-10)

-4	8
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

x	Extensive >75% cover (-5)
	Moderate 25-75% cover (-3)
	Sparse 5-25% cover (-1)
	Nearly absent <5% cover (0)
	Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

	Vegetated hummucks/tussucks
	Coarse woody debris >15cm (6in)
	Standing dead >25cm (10in) dbh
	Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's 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

8	**GRAND TOTAL(max 100 pts)**

Wetland RLP-26

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	2	
	Metric 3. Hydrology	6	
	Metric 4. Habitat	4	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	-4	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.ohio.gov/dsw/401/index.aspx to determine the wetland's category based on its quantitative score	8	Category based on score breakpoints Category 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Wetland RLP-26

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	(YES) Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	(NO)	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Wetland RLP-27

Site: Youngstown 138kV Reinforcement Project	Rater(s): Audrey Hanner	Date: 1/7/2020

Field Id: **w-aeh-20200107-01**

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)

0.01 acres

Metric 2. Upland buffers and surrounding land use.

3 | 3 (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)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [x] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

6.0 | 9.0 (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)
- [ ] 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
- [ ] point source (nonstormwater)
- [x] filling/grading
- [x] road bed/RR track
- [ ] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

7 | 16 (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)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [x] clearcutting
- [x] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [x] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

16 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland RLP-27

Site: Youngstown 138kV Reinforcement Project	Rater(s): Audrey Hanner	Date: 1/7/2020

Field Id:
w-aeh-20200107-01

	16
	subtotal this page
0	**16**
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

	Bog (10)
	Fen (10)
	Old growth forest (10)
	Mature forested wetland (5)
	Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
	Lake Erie coastal/tributary wetland-restricted hydrology (5)
	Lake Plain Sand Prairies (Oak Openings) (10)
	Relict Wet 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	**19**
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
0	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

	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 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but 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

19	**GRAND TOTAL(max 100 pts)**

Wetland RLP-27

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES (NO)	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES (NO)	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0	
	Metric 2. Buffers and surrounding land use	3	
	Metric 3. Hydrology	6	
	Metric 4. Habitat	7	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	3	
	TOTAL SCORE Consult most recent score calibration report at http://www.epa.ohio.gov/dsw/401/index.aspx to determine the wetland's category based on its quantitative score	19	Category based on score breakpoints Category 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Wetland RLP-27

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	(NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	(NO)	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	(YES) Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on an quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	(NO)	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	(NO) Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Wetland ID:	Wetland RLP-28

Site:	Youngstown 138kV Reinforcement Project	Rater(s):	M.R.Kline, L.H.Jacks	Date:	8/20/2020

Field ID:

W-200820-MRK-001 PFO

Delineated acres:	0.10
Total acres:	0.10

Metric 1. Wetland Area (size).

1.0 (max 6 pts) | 1.0 (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)

Metric 2. Upland buffers and surrounding land use.

9.0 (max 14 pts.) | 10.0 (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.

- [x] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] 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.

9.0 (max 30 pts.) | 19.0 (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)
- [ ] 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)
- [x] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

11.0 (max 20 pts.) | 30.0 (subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [x] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [x] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [x] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [x] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

30.0 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	Wetland RLP-28

Site:	Youngstown 138kV Reinforcement Project	Rater(s):	M.R.Kline, L.H.Jacks	Date:	8/20/2020

Field ID:

W-200820-MRK-001 PFO

30.0
subtotal this page

0.0 (max 10 pts.) **30.0** (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)

1.0 (max 20pts.) **31.0** (subtotal)

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

0	Aquatic bed
0	Emergent
0	Shrub
1	Forest
0	Mudflats
0	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 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but 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

31.0 **TOTAL (Max 100 pts)**

1 or 2 Gray Zone **Category**

Wetland ID:	Wetland RLP-28

ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1 Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	1		
	Metric 2. Buffers and surrounding land use	9		
	Metric 3. Hydrology	9		
	Metric 4. Habitat	11		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	1		
	TOTAL SCORE	31		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID:	Wetland RLP-28

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	***NO**	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	***NO**	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	***NO**	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	***NO**	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	***YES** Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	***NO** Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	***Category 2**	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

Wetland ID:	Wetland RLP-29a/b

Site:	Youngstown 138kV Reinforcement Project	Rater(s):	Brian J. Miller	Date:	10/6/2020

Field ID:

W-2020-10-06-BJM-001

Delineated acres:	0.17
Total acres:	0.17

1.0 / 1.0 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)
- [ ] 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)

9.0 / 10.0 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)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

19.5 / 29.5 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)
- [x] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [x] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [x] 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)
- [x] Regularly inundated/saturated (3)
- [x] Seasonally inundated (2)
- [ ] 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)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [x] road bed/RR track
- [ ] dredging
- [ ] Other:

10.0 / 39.5 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)
- [ ] Recovered (3)
- [x] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [x] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [x] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [x] toxic pollutants
- [x] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [x] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

39.5

subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	Wetland RLP-29a/b

Site:	Youngstown 138kV Reinforcement Project	Rater(s):	Brian J. Miller	Date:	10/6/2020

Field ID:
W-2020-10-06-BJM-001

39.5
subtotal this page

0.0 | 39.5 **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)

4.0 | 43.5 **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
1	Shrub
	Forest
	Mudflats
	Open water
	Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

	High (5)
	Moderately high(4)
	Moderate (3)
x	Moderately low (2)
	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer Table 1 ORAM long form for list. Add or deduct points for coverage

	Extensive >75% cover (-5)
	Moderate 25-75% cover (-3)
x	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
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 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but 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

43.5	**TOTAL (Max 100 pts)**
Modified 2	**Category**

Wetland ID:	Wetland RLP-29a/b

ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1 Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	*NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	1		
	Metric 2. Buffers and surrounding land use	9		
	Metric 3. Hydrology	19.5		
	Metric 4. Habitat	10		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	4		
	TOTAL SCORE	43.5		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID:	Wetland RLP-29a/b

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	***NO**	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	***NO**	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	***NO**	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	***NO**	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	***YES** Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	***NO** Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	***Category 2**	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

Wetland ID:	Wetland RLP-30

Site:	Youngstown 138kV Reinforcement Project	Rater(s):	Brian J. Miller	Date:	10/6/2020

Field ID:

W-2020-10-06-BJM-002

Delineated acres:	0.04
Total acres:	0.04

Metric 1. Wetland Area (size).

0.0 (max 6 pts) | 0.0 (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)

Metric 2. Upland buffers and surrounding land use.

9.0 (max 14 pts.) | 9.0 (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)
- [ ] 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.

15.0 (max 30 pts.) | 24.0 (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)
- [ ] Between stream/lake and other human use (1)
- [x] 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)
- [x] Seasonally inundated (2)
- [ ] 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

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [x] road bed/RR track
- [ ] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

6.0 (max 20 pts.) | 30.0 (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)
- [ ] 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

- [ ] mowing
- [ ] grazing
- [x] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [x] toxic pollutants
- [x] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [x] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

30.0 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	Wetland RLP-30

Site:	Youngstown 138kV Reinforcement Project	Rater(s):	Brian J. Miller	Date:	10/6/2020

Field ID:

W-2020-10-06-BJM-002

30.0
subtotal this page

0.0 / **30.0** — 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)

1.0 / **31.0** — 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

	Extensive >75% cover (-5)
	Moderate 25-75% cover (-3)
x	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 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but 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

31.0 TOTAL (Max 100 pts)

1 or 2 Gray Zone Category

Wetland ID:	Wetland RLP-30

ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1 Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	*NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0		
	Metric 2. Buffers and surrounding land use	9		
	Metric 3. Hydrology	15		
	Metric 4. Habitat	6		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	1		
	TOTAL SCORE	31		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID:	Wetland RLP-30

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	***NO**	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	***NO**	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	***NO**	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	***NO**	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	***YES** Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	***NO** Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	***Category 2**	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

Wetland ID:	Wetland RLP-31

Site:	Youngstown 138kV Reinforcement Project	Rater(s):	Brian J. Miller	Date:	9/8/2020

Field ID:

W-2020-10-06-BJM-003

Delineated acres:	0.10
Total acres:	0.10

Metric 1. Wetland Area (size).

0.0 (max 6 pts) | 0.0 (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)

Metric 2. Upland buffers and surrounding land use.

9.0 (max 14 pts.) | 9.0 (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)
- [ ] 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.

15.0 (max 30 pts.) | 24.0 (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)
- [ ] Between stream/lake and other human use (1)
- [x] 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)
- [x] Seasonally inundated (2)
- [ ] 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

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [x] road bed/RR track
- [ ] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

6.0 (max 20 pts.) | 30.0 (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)
- [ ] 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

- [ ] mowing
- [ ] grazing
- [x] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [x] toxic pollutants
- [x] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [x] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

30.0 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	Wetland RLP-31

Site:	Youngstown 138kV Reinforcement Project	Rater(s):	Brian J. Miller	Date:	9/8/2020

Field ID:
W-2020-10-06-BJM-003

30.0
subtotal this page

0.0 | **30.0** | **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)

1.0 | **31.0** | **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
	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

	Extensive >75% cover (-5)
	Moderate 25-75% cover (-3)
x	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 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but 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

31.0 **TOTAL (Max 100 pts)**
1 or 2 Gray Zone **Category**

Wetland ID:	Wetland RLP-31

ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1 Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	*NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0		
	Metric 2. Buffers and surrounding land use	9		
	Metric 3. Hydrology	15		
	Metric 4. Habitat	6		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	1		
	TOTAL SCORE	31		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID:	Wetland RLP-31

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	***NO**	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	***NO**	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	***NO**	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	***NO**	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	***YES** Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	***NO** Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	***Category 2**	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

Wetland ID:	Wetland RLP-32

Site:	Youngstown 138kV Reinforcement Project	Rater(s):	Brian J. Miller	Date:	10/6/2020

Field ID:

W-2020-10-06-BJM-004

Delineated acres:	0.08
Total acres:	0.08

Metric 1. Wetland Area (size).

0.0 / 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)

Metric 2. Upland buffers and surrounding land use.

5.0 / 5.0 (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.

16.0 / 21.0 (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)
- [ ] Between stream/lake and other human use (1)
- [x] 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)
- [x] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [ ] 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

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [x] road bed/RR track
- [ ] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

6.0 / 27.0 (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)
- [ ] 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

- [ ] mowing
- [ ] grazing
- [x] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [x] toxic pollutants
- [x] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [x] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

27.0 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	Wetland RLP-32

Site:	Youngstown 138kV Reinforcement Project	Rater(s):	Brian J. Miller	Date:	10/6/2020

Field ID:
W-2020-10-06-BJM-004

27.0
subtotal this page

0.0 (max 10 pts.) **27.0** (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)

5.0 (max 20pts.) **32.0** (subtotal)

Metric 6. Plant communities, interspersion, microtopography.

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)
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 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but 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

32.0 TOTAL (Max 100 pts)

1 or 2 Gray Zone Category

Wetland ID:	Wetland RLP-32

ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1 Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	*NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0		
	Metric 2. Buffers and surrounding land use	5		
	Metric 3. Hydrology	16		
	Metric 4. Habitat	6		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	5		
	TOTAL SCORE	32		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID:	Wetland RLP-32

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	***NO**	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	***NO**	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	***NO**	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	***NO**	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	***YES** Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	***NO** Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

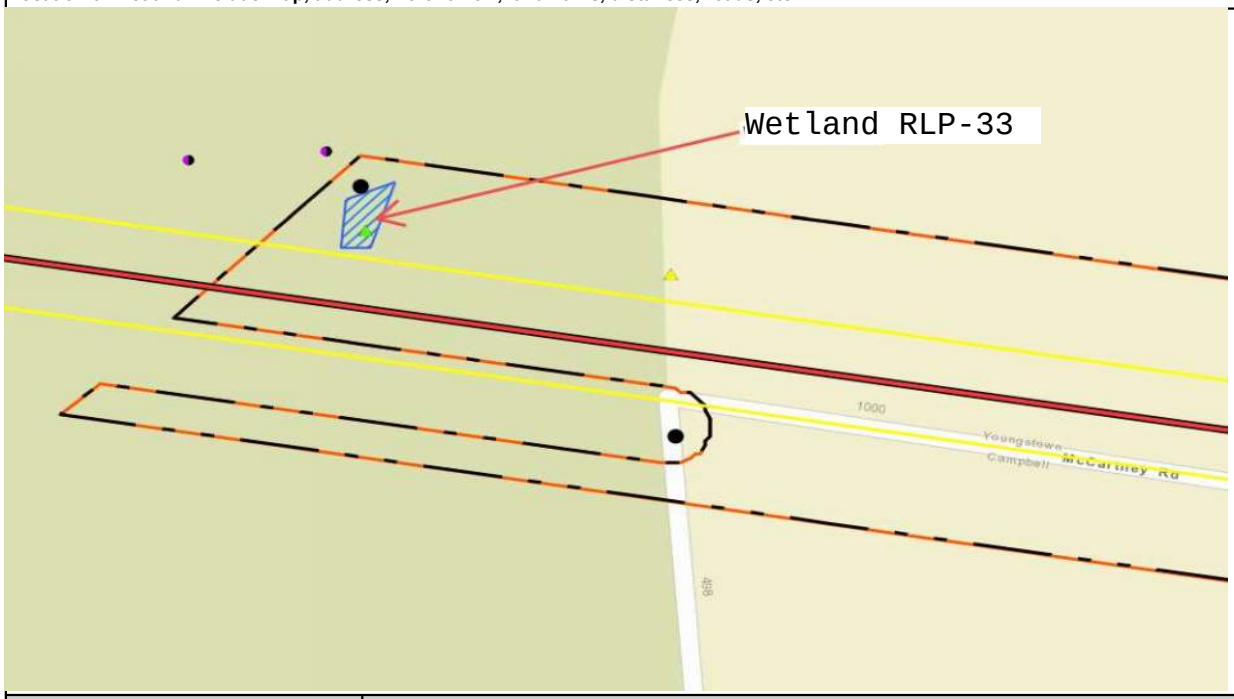
Final Category

Choose one	Category 1	***Category 2**	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

Background Information	
Name:	**MRK, TJK**
Date:	**6/17/2024**
Affiliation:	**AECOM**
Address:	**707 Grant Street, 5th Floor, Pittsburgh, PA 15219**
Phone Number:	**814-516-1130**
e-mail address:	matthew.kline@aecom.com
Name of Wetland:	**Wetland RLP-33**
Vegetation Communit(ies):	**PEM**
HGM Class(es):	**Depressional**

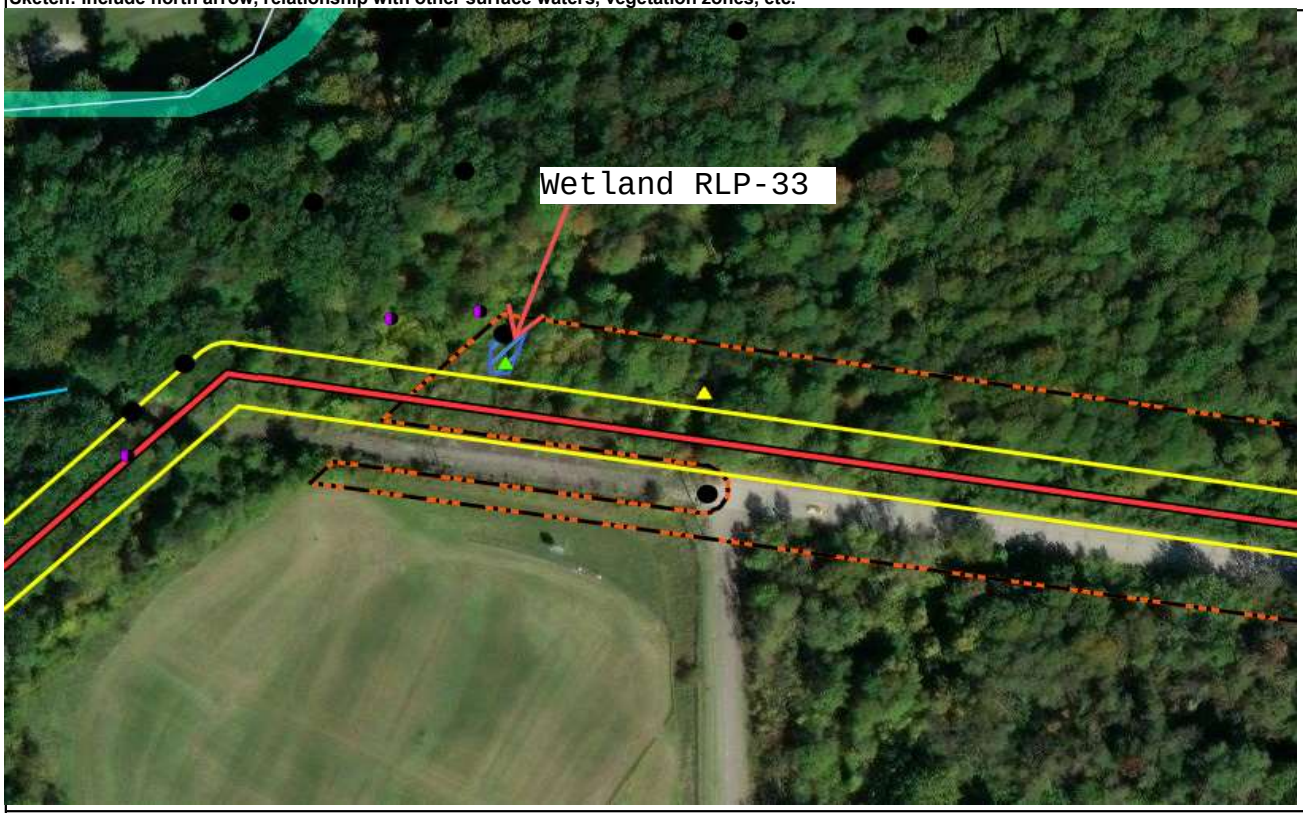
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.



Lat/Long or UTM Coordinate:	**41.091747, -80.616837**
USGS Quad Name:	**Campbell**
County:	**Mahoning**
Township:	**2N**
Section and Subsection:	**2W**
Hydrologic Unit Code:	**HUC12 - 050301030807 Dry Run-Mahoning River**
Site Visit:	**6/17/2024**
National Wetland Inventory Map:	**See Figure 2**
Ohio Wetland Inventory Map:	**See Figure 2**
Soil Survey:	**See Figure 2**
Delineation report/map:	**See Figure 3**

Name of Wetland:	Wetland RLP-33		
Wetland Size (delineated acres):	0.02	Wetland Size (Estimated total acres):	0.02

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.



Comments, Narrative Discussion, Justification of Category Changes:

This PEM wetland is located in a depression that is part of an old rock lined ditch. Rock lining of ditch has been covered with sediment and hydrophytic vegetation now dominates the area. Area is collecting surface runoff that dissipates into the surrounding upland forest. The wetland boundary follows edge of depression.

Final score:	15	Category:	1

Wetland ID:	Wetland RLP-33

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. Areas with a high degree of hydrologic interaction should be scored as a single wetland. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	X	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human- induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	X	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	X	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		X
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.		X

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Wetland ID:	Wetland RLP-33

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature and by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	*NO Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	*NO Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	*NO Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	*NO Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	*NO Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	*NO Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	*NO Go to Question 8a
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	*NO Go to Question 8b

Wetland ID:	Wetland RLP-33

8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	***NO** Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	***NO** Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	***NO** Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	***NO** Complete Quantitative Rating

Wetland ID:	Wetland RLP-33

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Wetland ID:	Wetland RLP-33

Site:	Youngstown 138kV Reinforcement Project	Rater(s):	MRK, TJK	Date:	6/17/2024

Field ID:

Wetland RLP-33 PEM

Delineated acres:	0.02
Total acres:	0.02

Metric 1. Wetland Area (size).

0.0 (subtotal) / 0.0 (max 6 pts)

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)

Metric 2. Upland buffers and surrounding land use.

6.0 (subtotal) / 6.0 (max 14 pts.)

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)
- [ ] 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 (subtotal) / 13.0 (max 30 pts.)

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)
- [ ] Between stream/lake and other human use (1)
- [x] 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
- [x] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

6.0 (subtotal) / 19.0 (max 20 pts.)

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)
- [ ] 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

- [ ] mowing
- [ ] grazing
- [x] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [x] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

19.0 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	Wetland RLP-33

Site:	Youngstown 138kV Reinforcement Project	Rater(s):	MRK, TJK	Date:	6/17/2024

19.0 subtotal this page

Field ID:
Wetland RLP-33 PEM

0.0 max 10 pts. **19.0** 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)

-4.0 max 20pts. **15.0** 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 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but 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

15.0 **TOTAL (Max 100 pts)**
1 **Category**

Wetland ID:	Wetland RLP-33

ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1 Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0		
	Metric 2. Buffers and surrounding land use	6		
	Metric 3. Hydrology	7		
	Metric 4. Habitat	6		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	-4		
	TOTAL SCORE	15		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID:	Wetland RLP-33

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	***NO**	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	***NO**	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	***NO**	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	***YES** Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	***NO**	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	***NO** Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	***Category 1**	Category 2	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

Background Information	
Name:	**MRK**
Date:	**9/20/2024**
Affiliation:	**AECOM**
Address:	**707 Grant Street, 5th Floor, Pittsburgh, PA 15219**
Phone Number:	**814-516-1130**
e-mail address:	matthew.kline@aecom.com
Name of Wetland:	**Wetland RLP-34**
Vegetation Communit(ies):	**PEM**
HGM Class(es):	**Depressional**

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.



Lat/Long or UTM Coordinate:	**41.085566, -80.633938**
USGS Quad Name:	**Campbell**
County:	**Mahoning**
Township:	**2N**
Section and Subsection:	**2W**
Hydrologic Unit Code:	**HUC12 - 050301030807 Dry Run-Mahoning River**
Site Visit:	**9/20/2024**
National Wetland Inventory Map:	**See Figure 2**
Ohio Wetland Inventory Map:	**See Figure 2**
Soil Survey:	**See Figure 2**
Delineation report/map:	**See Figure 3**

Name of Wetland:	Wetland RLP-34		
Wetland Size (delineated acres):	0.04	Wetland Size (Estimated total acres):	0.04

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.



Comments, Narrative Discussion, Justification of Category Changes:

This PEM wetland is located in an isolated depression that is collecting surface runoff from the surrounding area. Area has been disturbed in the past by industry/construction with soil piles observed in scrub/shrub areas around the wetland. The wetland boundary follows edge of depression and hydrophytic vegetation dominated by Phalaris arundinacea.

Final score:	12	Category:	1

Wetland ID:	Wetland RLP-34

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. Areas with a high degree of hydrologic interaction should be scored as a single wetland. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	X	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human- induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	X	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	X	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		X
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.		X

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Wetland ID:	Wetland RLP-34

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature and by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	*NO Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	*NO Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	*NO Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	*NO Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	*NO Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	*NO Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	*NO Go to Question 8a
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	*NO Go to Question 8b

Wetland ID:	Wetland RLP-34

8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	***NO** Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	***NO** Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	***NO** Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	***NO** Complete Quantitative Rating

Wetland ID:	Wetland RLP-34

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Wetland ID:	Wetland RLP-34

Site:	Youngstown 138kV Reinforcement Project	Rater(s):	MRK	Date:	9/20/2024

Field ID:

Wetland RLP-34 PEM

Delineated acres:	0.04
Total acres:	0.04

Metric 1. Wetland Area (size).

0.0 (subtotal) / 0.0 (max 6 pts)

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)

Metric 2. Upland buffers and surrounding land use.

1.0 (subtotal) / 1.0 (max 14 pts.)

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [x] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

7.0 (subtotal) / 8.0 (max 30 pts.)

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)
- [ ] 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

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

6.0 (subtotal) / 14.0 (max 20 pts.)

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)
- [ ] 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
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [x] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

14.0 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	Wetland RLP-34

Site:	Youngstown 138kV Reinforcement Project	Rater(s):	MRK	Date:	9/20/2024

Field ID:

Wetland RLP-34 PEM

14.0 subtotal this page

0.0 max 10 pts. | **14.0** 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)

-2.0 max 20pts. | **12.0** 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 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but 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

12.0	**TOTAL (Max 100 pts)**
1	**Category**

Wetland ID:	Wetland RLP-34

ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1 Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	0		
	Metric 2. Buffers and surrounding land use	1		
	Metric 3. Hydrology	7		
	Metric 4. Habitat	6		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	-2		
	TOTAL SCORE	12		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID:	Wetland RLP-34

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	***NO**	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	***NO**	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	***NO**	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	***YES** Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	***NO**	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	***NO** Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	***Category 1**	Category 2	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

APPENDIX C

OEPA QHEI AND HHEI STREAM FORMS

Stream RLP-01 | Warmwater Habitat

OhioEPA Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 83.50

Stream & Location: Youngstown 138kV Reinforcement Project
Line - Mahoning River

RM: 19.5 **Date:** 1 / 6 / 20

Scorers Full Name & Affiliation: Audrey Hanner, AECOM

River Code: 18 - 001 - 000 **STORET #:** **Lat./Long.:** (NAD 83 - decimal °) 41.1038 / 80.6597 Office verified location ☐

1] SUBSTRATE
Check **ONLY Two** substrate *TYPE BOXES*; estimate % or note every type present

BEST TYPES	POOL	RIFFLE	OTHER TYPES	POOL	RIFFLE
☐ ☐ BLDR /SLABS [10]			☐ ☐ HARDPAN [4]		
☐ ☐ BOULDER [9]			☐ ☐ DETRITUS [3]		
☐ ☐ COBBLE [8]			☐ ☐ MUCK [2]		
☐ ☐ GRAVEL [7]			☐ ☐ SILT [2]		
☐ ☐ SAND [6]			☐ ☐ ARTIFICIAL [0]		
☐ ☐ BEDROCK [5]					

(Score natural substrates; ignore sludge from point-sources)

NUMBER OF BEST TYPES: ☐ 4 or more [2] ☐ 3 or less [0]

Check ONE (*Or 2 & average*)

ORIGIN
- ☐ LIMESTONE [1]
- ☐ TILLS [1]
- ☐ WETLANDS [0]
- ☐ HARDPAN [0]
- ☐ SANDSTONE [0]
- ☐ RIP/RAP [0]
- ☐ LACUSTURINE [0]
- ☐ SHALE [-1]
- ☐ COAL FINES [-2]

QUALITY

SILT
- ☐ HEAVY [-2]
- ☐ MODERATE [-1]
- ☐ NORMAL [0]
- ☐ FREE [1]

EMBEDDEDNESS
- ☐ EXTENSIVE [-2]
- ☐ MODERATE [-1]
- ☐ NORMAL [0]
- ☐ NONE [1]

Substrate Maximum 20

Comments
Substrates not assessed due to channel inaccessibility and visual obstruction

2] INSTREAM COVER
Indicate presence 0 to 3: **0**-Absent; **1**-Very small amounts or if more common of marginal quality; **2**-Moderate amounts, but not of highest quality or in small amounts of highest quality; **3**-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

- 1 UNDERCUT BANKS [1]
- 3 OVERHANGING VEGETATION [1]
- 0 SHALLOWS (IN SLOW WATER) [1]
- 3 ROOTMATS [1]
- 0 POOLS > 70cm [2]
- 0 ROOTWADS [1]
- 1 BOULDERS [1]
- 1 OXBOWS, BACKWATERS [1]
- 0 AQUATIC MACROPHYTES [1]
- 1 LOGS OR WOODY DEBRIS [1]

AMOUNT Check ONE (*Or 2 & average*)
- ☐ EXTENSIVE >75% [11]
- ☒ MODERATE 25-75% [7]
- ☒ SPARSE 5-<25% [3]
- ☐ NEARLY ABSENT <5% [1]

Cover Maximum 20

Comments

3] CHANNEL MORPHOLOGY
Check ONE in each category (*Or 2 & average*)

SINUOSITY
- ☐ HIGH [4]
- ☐ MODERATE [3]
- ☒ LOW [2]
- ☐ NONE [1]

DEVELOPMENT
- ☐ EXCELLENT [7]
- ☐ GOOD [5]
- ☐ FAIR [3]
- ☒ POOR [1]

CHANNELIZATION
- ☐ NONE [6]
- ☐ RECOVERED [4]
- ☒ RECOVERING [3]
- ☐ RECENT OR NO RECOVERY [1]

STABILITY
- ☐ HIGH [3]
- ☒ MODERATE [2]
- ☐ LOW [1]

Channel Maximum 20

Comments
Stable riparian border of mature trees, but still has poor channel characteristics/development due to continuous channelization via urban surroundings.

4] BANK EROSION AND RIPARIAN ZONE
Check **ONE** in each category for ***EACH BANK*** (*Or 2 per bank & average*)
River right looking downstream

EROSION	L	R
NONE / LITTLE [3]	☒	☒
MODERATE [2]	☐	☐
HEAVY / SEVERE [1]	☐	☐

RIPARIAN WIDTH	L	R
WIDE > 50m [4]	☐	☐
MODERATE 10-50m [3]	☒	☒
NARROW 5-10m [2]	☐	☐
VERY NARROW < 5m [1]	☐	☐
NONE [0]	☐	☐

FLOOD PLAIN QUALITY	L	R
FOREST, SWAMP [3]	☐	☐
SHRUB OR OLD FIELD [2]	☒	☒
RESIDENTIAL, PARK, NEW FIELD [1]	☐	☐
FENCED PASTURE [1]	☐	☐
OPEN PASTURE, ROWCROP [0]	☐	☐

	L	R
CONSERVATION TILLAGE [1]	☐	☐
URBAN OR INDUSTRIAL [0]	☒	☒
MINING / CONSTRUCTION [0]	☐	☐

Indicate predominant land use(s) past 100m riparian.

Riparian Maximum 10

Comments
Floodplain predominantly contains successional/mature forested and shrub habitat.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH Check **ONE** (*ONLY!*)
- ☒ > 1m [6]
- ☐ 0.7-<1m [4]
- ☐ 0.4-<0.7m [2]
- ☐ 0.2-<0.4m [1]
- ☐ < 0.2m [0]

CHANNEL WIDTH Check ONE (*Or 2 & average*)
- ☒ POOL WIDTH > RIFFLE WIDTH [2]
- ☐ POOL WIDTH = RIFFLE WIDTH [1]
- ☐ POOL WIDTH < RIFFLE WIDTH [0]

CURRENT VELOCITY Check ALL that apply
- ☐ TORRENTIAL [-1]
- ☐ VERY FAST [1]
- ☒ FAST [1]
- ☒ MODERATE [1]
- ☐ SLOW [1]
- ☐ INTERSTITIAL [-1]
- ☐ INTERMITTENT [-2]
- ☐ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)

Pool / Current Maximum 12

Comments
No riffles observed within 200 ft reach.

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (*Or 2 & average*). ☒ NO RIFFLE [metric=0]

RIFFLE DEPTH
- ☐ BEST AREAS > 10cm [2]
- ☐ BEST AREAS 5-10cm [1]
- ☐ BEST AREAS < 5cm [metric=0]

RUN DEPTH
- ☒ MAXIMUM > 50cm [2]
- ☐ MAXIMUM < 50cm [1]

RIFFLE / RUN SUBSTRATE
- ☐ STABLE (e.g., Cobble, Boulder) [2]
- ☐ MOD. STABLE (e.g., Large Gravel) [1]
- ☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]

RIFFLE / RUN EMBEDDEDNESS
- ☐ NONE [2]
- ☐ LOW [1]
- ☐ MODERATE [0]
- ☐ EXTENSIVE [-1]

Riffle / Run Maximum 8

Comments
Run substrates not assessed due to inaccessibility and visual obstruction. No riffles observed within 200 ft. reach

6] GRADIENT (5.00 ft/mi)
DRAINAGE AREA (980.00 mi²)

- ☐ VERY LOW - LOW [2-4]
- ☒ MODERATE [6-10]
- ☐ HIGH - VERY HIGH [10-6]

%POOL: 5.00 %GLIDE: 90.00
%RUN: 5.00 %RIFFLE: 0.00

Gradient Maximum 10

A] SAMPLED REACH

Check ALL that apply

METHOD

- ☐ BOAT
- ☐ WADE
- ☐ L. LINE
- ☒ OTHER

STAGE

1st -sample pass- 2nd

- ☐ HIGH ☐
- ☐ UP ☐
- ☐ NORMAL ☐
- ☐ LOW ☐
- ☐ DRY ☐

DISTANCE

- ☐ 0.5 Km
- ☐ 0.2 Km
- ☐ 0.15 Km
- ☐ 0.12 Km
- ☐ OTHER

_____ meters

CLARITY

1st -sample pass- 2nd

- ☐ < 20 cm ☐
- ☐ 20-<40 cm ☐
- ☐ 40-70 cm ☐
- ■ > 70 cm/ CTB ☐
- ☐ SECCHI DEPTH ☐

1st _____ cm

2nd _____ cm

CANOPY

- ■ > 85%- OPEN
- ☐ 55%-<85%
- ☐ 30%-<55%
- ☐ 10%-<30%
- ☐ <10%- CLOSED

C] RECREATION

AREA DEPTH

POOL: ☐ >100ft² ■ >3ft

Comment RE: Reach consistency/ Is reach typical of steam?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

Reach typical of stream. Channelized stream within urban area (City of Youngstown). Excess turbidity due to recent precipitation events and urban run-off. Some metrics were not assessed due to limited accessibility and visual obstruction (see comments above). Total QHEI score obtained from OEPA Water Quality 2018 Assessment Unit Summaries, Station No. 301219 and Ohio 2018 Integrated Water Quality Monitoring and Assessment Report, therefore individual metric scores left blank.

B] AESTHETICS

- ☐ NUISANCE ALGAE
- ☐ INVASIVE MACROPHYTES
- ■ EXCESS TURBIDITY
- ☐ DISCOLORATION
- ☐ FOAM / SCUM
- ☐ OIL SHEEN
- ■ TRASH / LITTER
- ☐ NUISANCE ODOR
- ☐ SLUDGE DEPOSITS
- ☐ CSOs/SSOs/OUTFALLS

D] MAINTENANCE

Circle some & *COMMENT*

PUBLIC / PRIVATE / BOTH / NA
ACTIVE / HISTORIC / BOTH / NA
YOUNG-SUCCESSION-OLD
SPRAY / SNAG / REMOVED
MODIFIED / DIPPED OUT / NA
LEVEED / ONE SIDED
RELOCATED / CUTOFFS
MOVING-BEDLOAD-STABLE
ARMOURED / SLUMPS
ISLANDS / SCOURED
IMPOUNDED / DESICCATED
FLOOD CONTROL / DRAINAGE

E] ISSUES

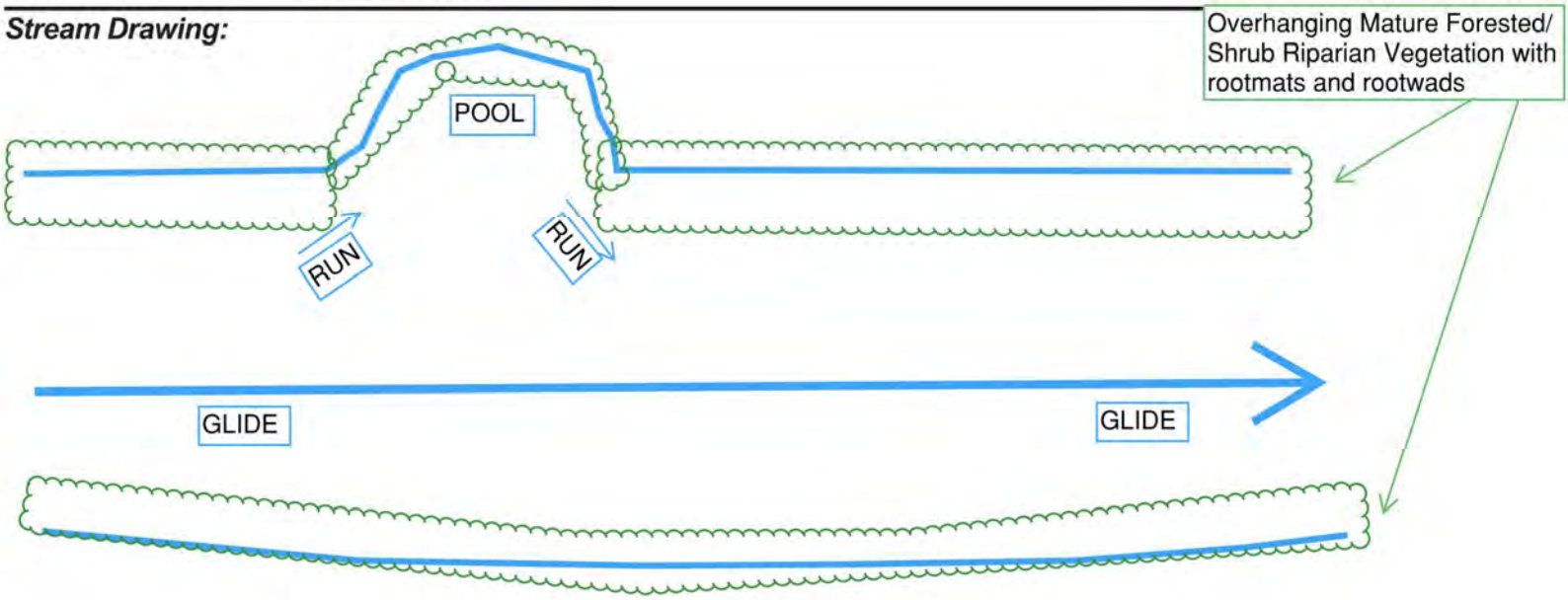
WWTP / CSO / NPDES / INDUSTRY
HARDENED / URBAN / DIRT&GRIME
CONTAMINATED / LANDFILL
BMPs-CONSTRUCTION-SEDIMENT
LOGGING / IRRIGATION / COOLING
BANK / EROSION / SURFACE
FALSE BANK / MANURE / LAGOON
WASH H_20 / TILE / H_20 TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY

F] MEASUREMENTS

- $\bar{x}$ width NA
- $\bar{x}$ depth NA
- max. depth NA
- $\bar{x}$ bankfull width ~175 ft
- bankfull $\bar{x}$ depth NA
- W/D ratio
- bankfull max. depth
- floodprone x^2 width
- entrench. ratio

Legacy Tree:

Stream Drawing:



Ohio EPA Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 22

Stream & Location: FE Lincoln Park-Riverbend 138kV Transmission Line **RM:** _ _ _._ **Date:** 01/08/2020

Scorers Full Name & Affiliation: Audrey Hanner AECOM

River Code: _ _ _ - _ _ _ - _ _ _ **STORET #:** _ _ _ _ _ _ **Lat./ Long.:** (NAD 83 - decimal °) 41.09543, -80.64044 **Office verified location** ☐

1] SUBSTRATE

Check *ONLY* **Two** substrate *TYPE BOXES*; estimate % or note every type present

Check ONE (*Or 2 & average*)

BEST TYPES	POOL	RIFFLE	OTHER TYPES	POOL	RIFFLE
☐ ☐ BLDR /SLABS [10]	____	____	☐ ☐ HARDPAN [4]	____	____
☐ ☐ BOULDER [9]	____	____	☐ ☐ DETRITUS [3]	____	____
☐ ☐ COBBLE [8]	____	____	☐ ☐ MUCK [2]	____	____
☐ ☐ GRAVEL [7]	____	____	☐ ☑ SILT [2]	30	____
☐ ☐ SAND [6]	____	____	☑ ☐ ARTIFICIAL [0]	70	____
☐ ☐ BEDROCK [5]	____	____			

(Score natural substrates; ignore sludge from point-sources)

NUMBER OF BEST TYPES: ☐ 4 or more [2] ☑ 3 or less [0]

ORIGIN
- ☐ LIMESTONE [1]
- ☐ TILLS [1]
- ☐ WETLANDS [0]
- ☐ HARDPAN [0]
- ☐ SANDSTONE [0]
- ☑ RIP/RAP [0]
- ☐ LACUSTURINE [0]
- ☐ SHALE [-1]
- ☐ COAL FINES [-2]

QUALITY

SILT
- ☐ HEAVY [-2]
- ☐ MODERATE [-1]
- ☐ NORMAL [0]
- ☑ FREE [1]

EMBEDDEDNESS
- ☐ EXTENSIVE [-2]
- ☐ MODERATE [-1]
- ☐ NORMAL [0]
- ☑ NONE [1]

Substrate 4 *Maximum 20*

Comments

2] INSTREAM COVER

Indicate presence 0 to 3: **0**-Absent; **1**-Very small amounts or if more common of marginal quality; **2**-Moderate amounts, but not of highest quality or in small amounts of highest quality; **3**-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

____ UNDERCUT BANKS [1]	____ POOLS > 70cm [2]	____ OXBOWS, BACKWATERS [1]
____ OVERHANGING VEGETATION [1]	____ ROOTWADS [1]	____ AQUATIC MACROPHYTES [1]
____ SHALLOWS (IN SLOW WATER) [1]	____ BOULDERS [1]	____ LOGS OR WOODY DEBRIS [1]
____ ROOTMATS [1]		

AMOUNT

Check ONE (*Or 2 & average*)
- ☐ EXTENSIVE >75% [11]
- ☐ MODERATE 25-75% [7]
- ☐ SPARSE 5-<25% [3]
- ☑ NEARLY ABSENT <5% [1]

Comments

Cover 1 *Maximum 20*

3] CHANNEL MORPHOLOGY

Check ONE in each category (*Or 2 & average*)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
☐ HIGH [4]	☐ EXCELLENT [7]	☐ NONE [6]	☐ HIGH [3]
☐ MODERATE [3]	☐ GOOD [5]	☐ RECOVERED [4]	☐ MODERATE [2]
☐ LOW [2]	☐ FAIR [3]	☐ RECOVERING [3]	☑ LOW [1]
☑ NONE [1]	☑ POOR [1]	☑ RECENT OR NO RECOVERY [1]	

Comments

Channel 4 *Maximum 20*

4] BANK EROSION AND RIPARIAN ZONE

Check **ONE** in each category for *EACH BANK* (*Or 2 per bank & average*)

River right looking downstream

EROSION (L R)	RIPARIAN WIDTH (L R)	FLOOD PLAIN QUALITY (L R)	(L R)
☑ ☑ NONE / LITTLE [3]	☐ ☐ WIDE > 50m [4]	☐ ☐ FOREST, SWAMP [3]	☐ ☐ CONSERVATION TILLAGE [1]
☐ ☐ MODERATE [2]	☐ ☐ MODERATE 10-50m [3]	☐ ☐ SHRUB OR OLD FIELD [2]	☑ ☑ URBAN OR INDUSTRIAL [0]
☐ ☐ HEAVY / SEVERE [1]	☐ ☐ NARROW 5-10m [2]	☐ ☐ RESIDENTIAL, PARK, NEW FIELD [1]	☐ ☐ MINING / CONSTRUCTION [0]
	☐ ☐ VERY NARROW < 5m [1]	☐ ☐ FENCED PASTURE [1]	
	☑ ☑ NONE [0]	☐ ☐ OPEN PASTURE, ROWCROP [0]	

Indicate predominant land use(s) past 100m riparian.

Comments

Riparian 3 *Maximum 10*

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH (Check **ONE** (*ONLY!*))
- ☐ > 1m [6]
- ☐ 0.7-<1m [4]
- ☑ 0.4-<0.7m [2]
- ☐ 0.2-<0.4m [1]
- ☐ < 0.2m [0]

CHANNEL WIDTH (Check ONE (*Or 2 & average*))
- ☐ POOL WIDTH > RIFFLE WIDTH [2]
- ☑ POOL WIDTH = RIFFLE WIDTH [1]
- ☐ POOL WIDTH < RIFFLE WIDTH [0]

CURRENT VELOCITY (Check ALL that apply)
- ☐ TORRENTIAL [-1]
- ☐ VERY FAST [1]
- ☐ FAST [1]
- ☑ MODERATE [1]
- ☐ SLOW [1]
- ☐ INTERSTITIAL [-1]
- ☐ INTERMITTENT [-2]
- ☐ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)

Comments

Pool / Current 4 *Maximum 12*

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (*Or 2 & average*). ☑ NO RIFFLE [metric=0]

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
☐ BEST AREAS > 10cm [2]	☐ MAXIMUM > 50cm [2]	☐ STABLE (e.g., Cobble, Boulder) [2]	☐ NONE [2]
☐ BEST AREAS 5-10cm [1]	☐ MAXIMUM < 50cm [1]	☐ MOD. STABLE (e.g., Large Gravel) [1]	☐ LOW [1]
☐ BEST AREAS < 5cm [metric=0]		☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]	☐ MODERATE [0]
			☐ EXTENSIVE [-1]

Comments

Riffle / Run 0 *Maximum 8*

6] GRADIENT

(38.3 ft/mi) ☐ VERY LOW - LOW [2-4] ☐ MODERATE [6-10] ☑ HIGH - VERY HIGH [10-6]

DRAINAGE AREA (21.1 mi²)

%POOL: ____ %GLIDE: ____ %RUN: 100 %RIFFLE: ____

Gradient 6 *Maximum 10*

A] SAMPLED REACH

Check ALL that apply

Comment RE: Reach consistency/ Is reach typical of steam?, *Recreation/* Observed - Inferred, *Other/* Sampling observations, Concerns, Access directions, etc.

METHOD

- ☐ BOAT
- ☐ WADE
- ☐ L. LINE
- ☐ OTHER

STAGE

1st -sample pass-	2nd
☐ HIGH	☐
☐ UP	☐
☐ NORMAL	☐
☐ LOW	☐
☐ DRY	☐

DISTANCE

- ☐ 0.5 Km
- ☐ 0.2 Km
- ☐ 0.15 Km
- ☐ 0.12 Km
- ☐ OTHER

200 feet

CLARITY

1st –sample pass–	2nd
☐ < 20 cm	☐
☐ 20-<40 cm	☐
☐ 40-70 cm	☐
☐ > 70 cm/ CTB	☐
☐ SECCHI DEPTH	☐

CANOPY

- ☐ > 85%- OPEN
- ☐ 55%-<85%
- ☐ 30%-<55%
- ☐ 10%-<30%
- ☐ <10%- CLOSED

pass 1st _____ cm

pass 2nd _____ cm

C] REC

B] AESTHETIC

- ☐ NUISANCE ALGAE
- ☐ INVASIVE MACROPHYTES
- ☐ EXCESS TURBIDITY
- ☐ DISCOLORATION
- ☐ FOAM / SCUM
- ☐ OIL SHEEN
- ☐ TRASH / LITTER
- ☐ NUISANCE ODOR
- ☐ SLUDGE DEPOSITS
- ☐ CSOs/SSOs/OUTFALLS

ION AREA DEPTH

POOL: ☐ >100ft² ☐ >3ft

D] MAINTENANCE

Circle some & *COMMENT*

PUBLIC / PRIVATE / BOTH / NA
ACTIVE / HISTORIC / BOTH / NA
YOUNG-SUCCESSION-OLD
SPRAY / SNAG / REMOVED
MODIFIED / DIPPED OUT / NA
LEVEED / ONE SIDED
RELOCATED / CUTOFFS
MOVING-BEDLOAD-STABLE
ARMOURED / SLUMPS
ISLANDS / SCOURED
IMPOUNDED / DESICCATED
FLOOD CONTROL / DRAINAGE

E] ISSUES

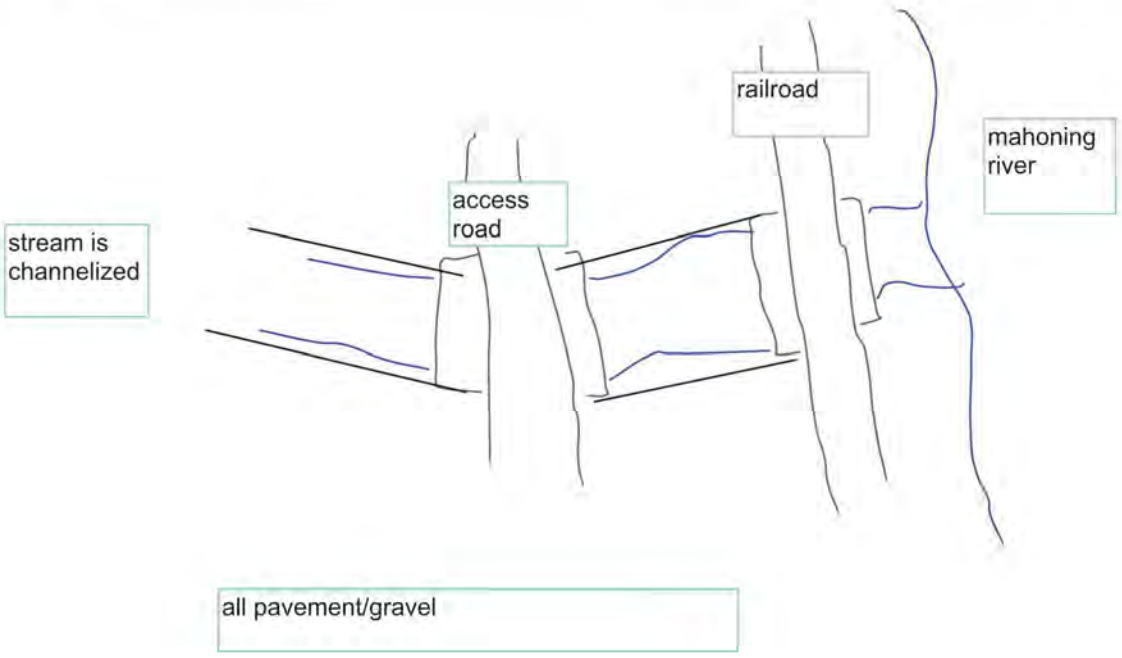
WWTP / CSO / NPDES / INDUSTRY
HARDENED / URBAN / DIRT&GRIME
CONTAMINATED / LANDFILL
BMPs-CONSTRUCTION-SEDIMENT
LOGGING / IRRIGATION / COOLING
BANK / EROSION / SURFACE
FALSE BANK / MANURE / LAGOON
WASH H_20 / TILE / H_20 TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY

F] MEASUREMENTS

- $\bar{x}$ width
- $\bar{x}$ depth
- max. depth
- $\bar{x}$ bankfull width
- bankfull $\bar{x}$ depth
- W/D ratio
- bankfull max. depth
- floodprone x^2 width
- entrench. ratio

Le ***Tree:***

Stream Drawing:



Stream RLP-03 Modified Class 1

Ohio EPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 25

SITE NAME/LOCATION: Youngstown 138kV Reinforcement Project

hh-aeh-20200108-01 SITE NUMBER: NA RIVER BASIN: Dry Run-Mahoning DRAINAGE AREA (mi²): 0.14

LENGTH OF STREAM REACH (ft): 200 LAT.: 41.08684 LONG.: -80.62863 RIVER CODE: NA RIVER MILE: NA

DATE: 01/08/20 SCORER: AEH/SKM COMMENTS: Ephemeral

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY

recent construction west of stream, silt/dirt falling into stream

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐ ☑	SILT [3 pt]	55%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	20%
☑	GRAVEL (2-64 mm) [9 pts]	25%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 3

HHEI Metric Points

Substrate Max = 40: 15

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: MAXIMUM POOL DEPTH (Inches): 0.25

Pool Depth Max = 30: 5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: AVERAGE BANKFULL WIDTH (Feet): 0.50

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☑ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Mahoning River Distance from Evaluated Stream 0.30

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Youngstown NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Mahoning Township / City: Youngstown

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 01/09/20 Quantity: 0.10

Photograph Information: 3 photos, upstream, downsteam and substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 90%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☑ Unstable ☐

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

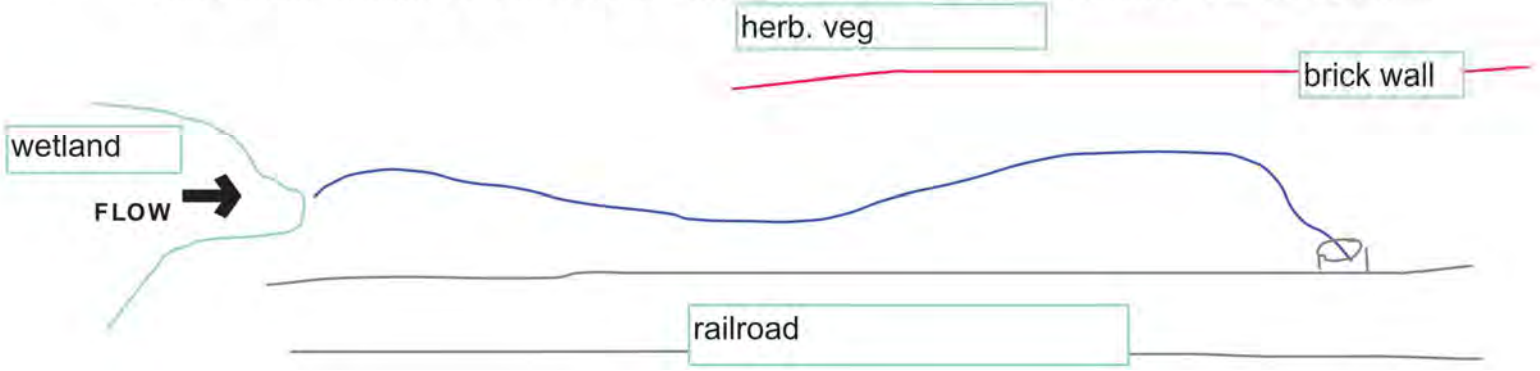
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Save as pdf Reset Form

Stream RLP-04 | Coldwater Habitat

OhioEPA Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 51

Stream & Location: Youngstown 138kV Reinforcement Project - DRY RUN | **RM:** N/A | **Date:** 01/08/2020

qh-JBL-20200108-01 | **Scorers Full Name & Affiliation:** JTT, JBL / AECOM

River Code: N/A | **STORET #:** N/A | **Lat./ Long.:** (NAD 83 - decimal °) 41.087213, -80.619971 | Office verified location ☐

1] SUBSTRATE

Check **ONLY Two** substrate *TYPE BOXES*; estimate % or note every type present

BEST TYPES	POOL	RIFFLE	OTHER TYPES	POOL	RIFFLE
☐☐ BLDR /SLABS [10]		15	☐☐ HARDPAN [4]		
☐☐ BOULDER [9]			☐☐ DETRITUS [3]		
☑☐ COBBLE [8]	10	40	☐☐ MUCK [2]		
☐☑ GRAVEL [7]	25	25	☐☐ SILT [2]	25	
☐☐ SAND [6]	30	15	☐☐ ARTIFICIAL [0]		
☐☐ BEDROCK [5]	10	5			

(Score natural substrates; ignore sludge from point-sources)

NUMBER OF BEST TYPES: ☑ 4 or more [2] ☐ 3 or less [0]

Check ONE (*Or 2 & average*)

ORIGIN
- ☑ LIMESTONE [1]
- ☑ TILLS [1]
- ☐ WETLANDS [0]
- ☐ HARDPAN [0]
- ☐ SANDSTONE [0]
- ☐ RIP/RAP [0]
- ☐ LACUSTURINE [0]
- ☐ SHALE [-1]
- ☐ COAL FINES [-2]

QUALITY

SILT
- ☐ HEAVY [-2]
- ☐ MODERATE [-1]
- ☑ NORMAL [0]
- ☐ FREE [1]

EMBEDDEDNESS
- ☐ EXTENSIVE [-2]
- ☑ MODERATE [-1]
- ☐ NORMAL [0]
- ☐ NONE [1]

Substrate 15 (Maximum 20)

Comments

2] INSTREAM COVER

Indicate presence 0 to 3: **0**-Absent; **1**-Very small amounts or if more common of marginal quality; **2**-Moderate amounts, but not of highest quality or in small amounts of highest quality; **3**-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

- ____ UNDERCUT BANKS [1]
- 1 OVERHANGING VEGETATION [1]
- ____ SHALLOWS (IN SLOW WATER) [1]
- ____ ROOTMATS [1]
- ____ POOLS > 70cm [2]
- ____ ROOTWADS [1]
- ____ BOULDERS [1]
- ____ OXBOWS, BACKWATERS [1]
- ____ AQUATIC MACROPHYTES [1]
- 1 LOGS OR WOODY DEBRIS [1]

AMOUNT Check ONE (*Or 2 & average*)
- ☐ EXTENSIVE >75% [11]
- ☐ MODERATE 25-75% [7]
- ☐ SPARSE 5-<25% [3]
- ☑ NEARLY ABSENT <5% [1]

Cover 3 (Maximum 20)

Comments

3] CHANNEL MORPHOLOGY

Check ONE in each category (*Or 2 & average*)

SINUOSITY
- ☐ HIGH [4]
- ☐ MODERATE [3]
- ☑ LOW [2]
- ☐ NONE [1]

DEVELOPMENT
- ☐ EXCELLENT [7]
- ☑ GOOD [5]
- ☑ FAIR [3]
- ☐ POOR [1]

CHANNELIZATION
- ☐ NONE [6]
- ☑ RECOVERED [4]
- ☐ RECOVERING [3]
- ☐ RECENT OR NO RECOVERY [1]

STABILITY
- ☐ HIGH [3]
- ☑ MODERATE [2]
- ☐ LOW [1]

Channel 11 (Maximum 20)

Comments

4] BANK EROSION AND RIPARIAN ZONE

Check **ONE** in each category for ***EACH BANK*** (*Or 2 per bank & average*)

River right looking downstream

EROSION

L	R	
☑	☑	NONE / LITTLE [3]
☐	☐	MODERATE [2]
☐	☐	HEAVY / SEVERE [1]

RIPARIAN WIDTH

L	R	
☐	☐	WIDE > 50m [4]
☑	☑	MODERATE 10-50m [3]
☐	☐	NARROW 5-10m [2]
☐	☐	VERY NARROW < 5m [1]
☐	☐	NONE [0]

FLOOD PLAIN QUALITY

L	R	
☑	☑	FOREST, SWAMP [3]
☐	☐	SHRUB OR OLD FIELD [2]
☑	☑	RESIDENTIAL, PARK, NEW FIELD [1]
☐	☐	FENCED PASTURE [1]
☐	☐	OPEN PASTURE, ROWCROP [0]

L	R	
☐	☐	CONSERVATION TILLAGE [1]
☐	☐	URBAN OR INDUSTRIAL [0]
☐	☐	MINING / CONSTRUCTION [0]

Indicate predominant land use(s) past 100m riparian.

Riparian 8 (Maximum 10)

Comments

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH Check **ONE** (*ONLY!*)
- ☐ > 1m [6]
- ☐ 0.7-<1m [4]
- ☑ 0.4-<0.7m [2]
- ☐ 0.2-<0.4m [1]
- ☐ < 0.2m [0]

CHANNEL WIDTH Check ONE (*Or 2 & average*)
- ☑ POOL WIDTH > RIFFLE WIDTH [2]
- ☐ POOL WIDTH = RIFFLE WIDTH [1]
- ☐ POOL WIDTH > RIFFLE WIDTH [0]

CURRENT VELOCITY Check ALL that apply
- ☐ TORRENTIAL [-1]
- ☐ VERY FAST [1]
- ☐ FAST [1]
- ☑ MODERATE [1]
- ☑ SLOW [1]
- ☐ INTERSTITIAL [-1]
- ☐ INTERMITTENT [-2]
- ☐ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)

Pool / Current 6 (Maximum 12)

Comments

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (*Or 2 & average*). ☐ NO RIFFLE [metric=0]

RIFFLE DEPTH
- ☐ BEST AREAS > 10cm [2]
- ☑ BEST AREAS 5-10cm [1]
- ☐ BEST AREAS < 5cm [metric=0]

RUN DEPTH
- ☐ MAXIMUM > 50cm [2]
- ☑ MAXIMUM < 50cm [1]

RIFFLE / RUN SUBSTRATE
- ☑ STABLE (e.g., Cobble, Boulder) [2]
- ☐ MOD. STABLE (e.g., Large Gravel) [1]
- ☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]

RIFFLE / RUN EMBEDDEDNESS
- ☐ NONE [2]
- ☐ LOW [1]
- ☑ MODERATE [0]
- ☐ EXTENSIVE [-1]

Riffle / Run 4 (Maximum 8)

Comments

6] GRADIENT

(34.4 ft/mi) ☐ VERY LOW - LOW [2-4] ☐ MODERATE [6-10] ☐ HIGH - VERY HIGH [10-6]

DRAINAGE AREA (9.69 mi²)

%POOL: 30 %GLIDE: 0 %RUN: 40 %RIFFLE: 30

Gradient 4 (Maximum 10)

A] SAMPLED REACH

Check ALL that apply

Comment RE: Reach consistency/ Is reach typical of steam?, *Recreation/* Observed - Inferred, *Other/* Sampling observations, Concerns, Access directions, etc.

Dry Run (qh-jbl-20200108-01) flows NW to SE through the survey corridor under the Gladstone St stone bridge. Part of this stretch is within Lincoln Park, a city park.

*Ohio Beneficial Use Designation = Warm Water Habitat

METHOD

- ☐ BOAT
- ☐ WADE
- ☐ L. LINE
- ☑ OTHER

STAGE

	1st -sample pass-	2nd
☐ HIGH	☐	
☐ UP	☐	
☑ NORMAL	☑	
☐ LOW	☐	
☐ DRY	☐	

DISTANCE

- ☐ 0.5 Km
- ☐ 0.2 Km
- ☐ 0.15 Km
- ☐ 0.12 Km
- ☑ OTHER

200 feet

CLARITY

	1st --sample pass--	2nd
☑ < 20 cm	☑	
☐ 20-<40 cm	☐	
☐ 40-70 cm	☐	
☐ > 70 cm/ CTB	☐	
☐ SECCHI DEPTH	☐	

CANOPY

- ☑ > 85%- OPEN
- ☐ 55%-<85%
- ☐ 30%-<55%
- ☐ 10%-<30%
- ☐ <10%- CLOSED

1st pass _____ cm

2nd pass _____ cm

C] REC

B] AESTHETIC

- ☐ NUISANCE ALGAE
- ☐ INVASIVE MACROPHYTES
- ☐ EXCESS TURBIDITY
- ☐ DISCOLORATION
- ☐ FOAM / SCUM
- ☐ OIL SHEEN
- ☐ TRASH / LITTER
- ☐ NUISANCE ODOR
- ☐ SLUDGE DEPOSITS
- ☐ CSOs/SSOs/OUTFALLS

ION AREA DEPTH

POOL: ☐ >100ft² ☐ >3ft

D] MAINTENANCE

Circle some & *COMMENT*

PUBLIC / PRIVATE / BOTH / NA
ACTIVE / HISTORIC / BOTH / NA
YOUNG-SUCCESSION-OLD
SPRAY / SNAG / REMOVED
MODIFIED / DIPPED OUT / NA
LEVEED / ONE SIDED
RELOCATED / CUTOFFS
MOVING-BEDLOAD-STABLE
ARMOURED / SLUMPS
ISLANDS / SCOURED
IMPOUNDED / DESICCATED
FLOOD CONTROL / DRAINAGE

E] ISSUES

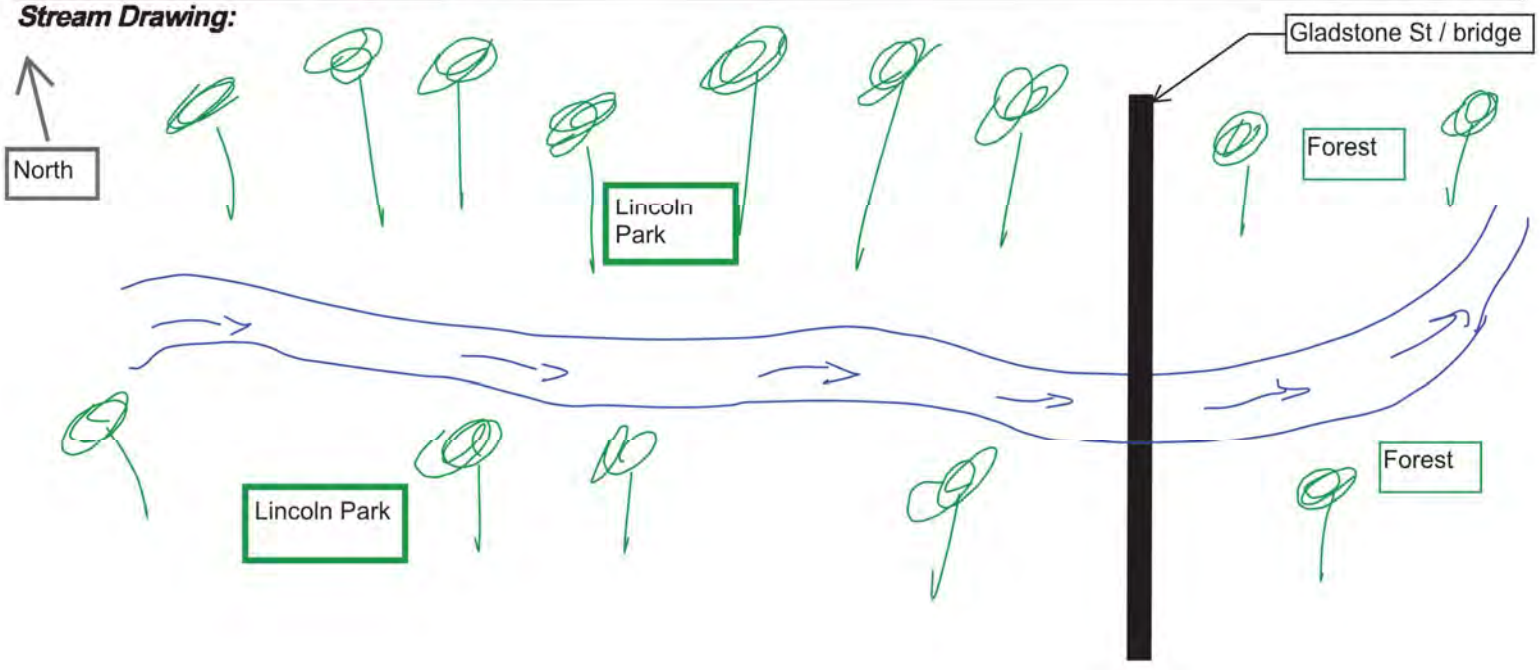
WWTP / CSO / NPDES / INDUSTRY
HARDENED / URBAN / DIRT&GRIME
CONTAMINATED / LANDFILL
BMPs-CONSTRUCTION-SEDIMENT
LOGGING / IRRIGATION / COOLING
BANK / EROSION / SURFACE
FALSE BANK / MANURE / LAGOON
WASH H_20 / TILE / H_20 TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY

F] MEASUREMENTS

$\bar{x}$ width	
$\bar{x}$ depth	
max. depth	20 in
$\bar{x}$ bankfull width	78in
bankfull $\bar{x}$ depth	
W/D ratio	
bankfull max. depth	
floodprone x^2 width	
entrench. ratio	

Le ***Tree:***

Stream Drawing:



Stream RLP-05 Class 2

Ohio EPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 39

SITE NAME/LOCATION: Youngstown 138kV Reinforcement Project

hh-jbl-20200108-02 SITE NUMBER: 02 RIVER BASIN: Mahoning River DRAINAGE AREA (mi²): 0.04

LENGTH OF STREAM REACH (ft): 200 LAT.: 41.08964 LONG.: -80.61954 RIVER CODE: NA RIVER MILE: NA

DATE: 01/08/20 SCORER: JTT, JBL COMMENTS: Intermittent

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY
channelized, box culvert

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]	0%	☐ ☐	SILT [3 pt]	25%
☐ ☐	BOULDER (>256 mm) [16 pts]	0%	☐ ☐	LEAF PACK/WOODY DEBRIS [3 pts]	15%
☐ ☐	BEDROCK [16 pt]	0%	☐ ☐	FINE DETRITUS [3 pts]	0%
☐ ☐	COBBLE (65-256 mm) [12 pts]	0%	☐ ☐	CLAY or HARDPAN [0 pt]	0%
☐ ☑	GRAVEL (2-64 mm) [9 pts]	30%	☐ ☐	MUCK [0 pts]	0%
☑ ☐	SAND (<2 mm) [6 pts]	30%	☐ ☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 TOTAL NUMBER OF SUBSTRATE TYPES: 4

HHEI Metric Points

Substrate Max = 40: 19

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☑	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: MAXIMUM POOL DEPTH (Inches): 1.00

Pool Depth Max = 30: 5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

☐	> 4.0 meters (> 13') [30 pts]	☑	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: AVERAGE BANKFULL WIDTH (Feet): 4.00

Bankfull Width Max=30: 15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: Stream cuts through steep hill slope

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☑	Stream Flowing	☐	Moist Channel, isolated pools, no flow (Intermittent)
☐	Subsurface flow with isolated pools (Interstitial)	☐	Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐	None	☐	1.0	☐	2.0	☐	3.0
☑	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☑ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run Distance from Evaluated Stream 440 ft

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: NA NRCS Soil Map Stream Order NA

County: Mahoning Township / City: Youngstown

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 01/05/20 Quantity: 0.16in

Photograph Information: 3 photos, upstream, downsteam and substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 85%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: NA

Field Measures: Temp (°C) NA Dissolved Oxygen (mg/l) NA pH (S.U.) NA Conductivity (µmhos/cm) NA

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☐ Unstable ☑

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

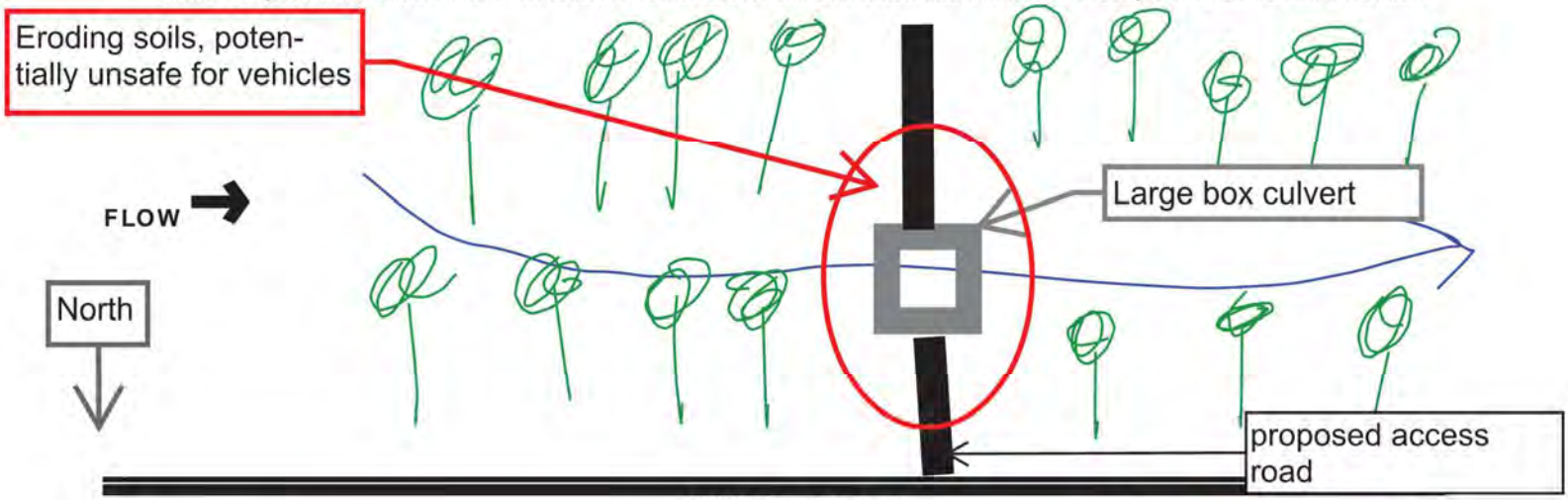
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



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Stream RLP-06 | Modified Class 1

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 19

SITE NAME/LOCATION: Youngstown 138kV Reinforcement Project

hh-jbl-20200108-03 | SITE NUMBER: 03 | RIVER BASIN: Mahoning River | DRAINAGE AREA (mi²): 0.00

LENGTH OF STREAM REACH (ft): 200 | LAT.: 41.09001 | LONG.: -80.61892 | RIVER CODE: NA | RIVER MILE: NA

DATE: 01/08/20 | SCORER: JTT, JBL | COMMENTS: Intermittent

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY

top of stream is covered in junk/garbage

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]	0%	☑ ☑	SILT [3 pt]	70%
☐ ☐	BOULDER (>256 mm) [16 pts]	0%	☐ ☐	LEAF PACK/WOODY DEBRIS [3 pts]	20%
☐ ☐	BEDROCK [16 pt]	0%	☐ ☐	FINE DETRITUS [3 pts]	0%
☐ ☐	COBBLE (65-256 mm) [12 pts]	0%	☐ ☐	CLAY or HARDPAN [0 pt]	0%
☐ ☐	GRAVEL (2-64 mm) [9 pts]	10%	☐ ☐	MUCK [0 pts]	0%
☐ ☐	SAND (<2 mm) [6 pts]	0%	☐ ☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) | 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 | TOTAL NUMBER OF SUBSTRATE TYPES: 3

HHEI Metric Points

Substrate Max = 40: 9

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ > 5 cm - 10 cm [15 pts]
☑ < 5 cm [5 pts]
☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: | MAXIMUM POOL DEPTH (Inches): 1.00

Pool Depth Max = 30: 5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

☐ > 4.0 meters (> 13') [30 pts]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: | AVERAGE BANKFULL WIDTH (Feet): 1.00

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L R	FLOODPLAIN QUALITY (Most Predominant per Bank) L R	
☐ ☐ Wide >10m	☑ ☑ Mature Forest, Wetland	☐ ☐ Conservation Tillage
☐ ☐ Moderate 5-10m	☐ ☐ Immature Forest, Shrub or Old Field	☐ ☐ Urban or Industrial
☐ ☐ Narrow <5m	☐ ☐ Residential, Park, New Field	☐ ☐ Open Pasture, Row Crop
☑ ☑ None	☐ ☐ Fenced Pasture	☐ ☐ Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☑ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None ☐ 0.5 ☑ 1.0 ☐ 1.5 ☐ 2.0 ☐ 2.5 ☐ 3.0 ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☑ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run Distance from Evaluated Stream 600 ft

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: NA NRCS Soil Map Stream Order NA

County: Mahoning Township / City: Youngstown

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 01/05/20 Quantity: 0.16in

Photograph Information: 3 photos, upstream, downsteam and substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 85%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: NA

Field Measures: Temp (°C) NA Dissolved Oxygen (mg/l) NA pH (S.U.) NA Conductivity (µmhos/cm) NA

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☐ Unstable ☑

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

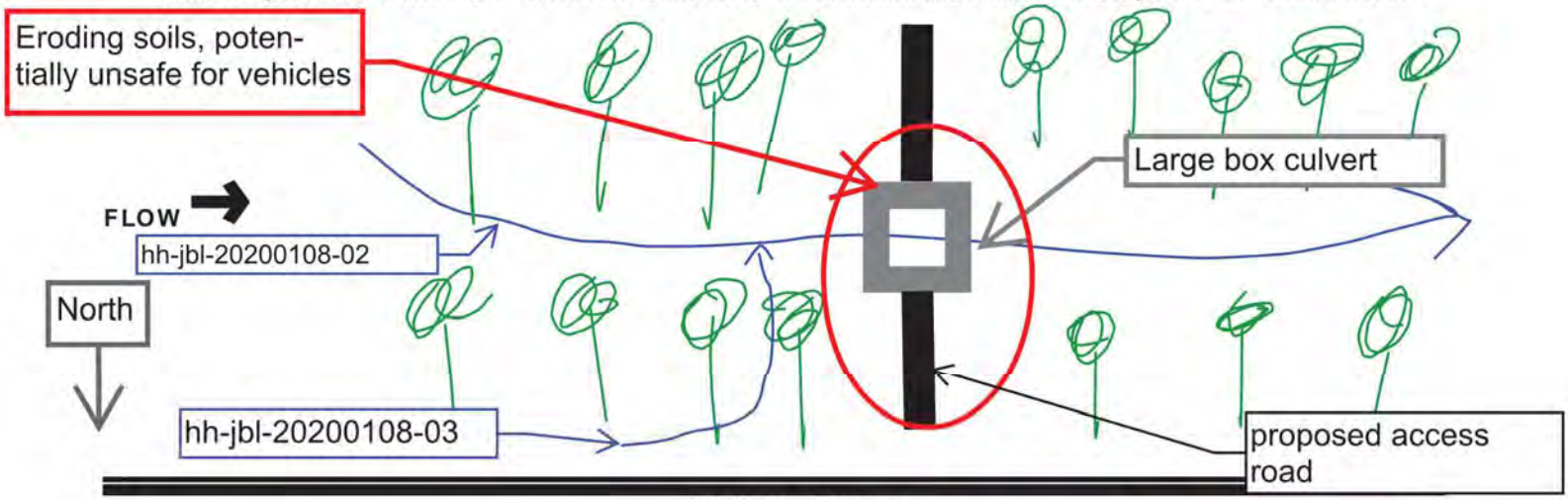
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



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Stream RLP-07 Class 1

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 25

SITE NAME/LOCATION Youngstown 138kV Reinforcement Project

s-bl-20200108 SITE NUMBER 02 RIVER BASIN Dry Run-Mahoning DRAINAGE AREA (mi²) 0.10

LENGTH OF STREAM REACH (ft) 100 LAT. 41.09164 LONG. -80.61846 RIVER CODE _____ RIVER MILE 0.04

DATE 01/08/20 SCORER BL, RM COMMENTS ephemeral

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY
old, failed culvert crosses channel

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]	0%	☐ ☐	SILT [3 pt]	10%
☐ ☐	BOULDER (>256 mm) [16 pts]	0%	☐ ☐	LEAF PACK/WOODY DEBRIS [3 pts]	15%
☐ ☐	BEDROCK [16 pt]	0%	☐ ☐	FINE DETRITUS [3 pts]	5%
☐ ☐	COBBLE (65-256 mm) [12 pts]	0%	☐ ☐	CLAY or HARDPAN [0 pt]	0%
☑ ☐	GRAVEL (2-64 mm) [9 pts]	40%	☐ ☐	MUCK [0 pts]	0%
☐ ☑	SAND (<2 mm) [6 pts]	30%	☐ ☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 0.00% (A) 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 TOTAL NUMBER OF SUBSTRATE TYPES: 5

HHEI Metric Points

Substrate Max = 40: 20

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ > 5 cm - 10 cm [15 pts]
☐ < 5 cm [5 pts]
☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS OWHM=2.1'w x 0.2'd MAXIMUM POOL DEPTH (Inches): 0.00

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

☐ > 4.0 meters (> 13') [30 pts]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS BF=2.4'w x 0.9'd AVERAGE BANKFULL WIDTH (Feet): 2.40

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS scrubby woods all around, within old roadway bridge crossing

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☑ Dry channel, no water (Ephemeral)

COMMENTS ephemeral, dry channel

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None ☑ 1.0 ☐ 2.0 ☐ 3.0
☐ 0.5 ☐ 1.5 ☐ 2.5 ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☑ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run Distance from Evaluated Stream 0.04

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: NA NRCS Soil Map Stream Order NA

County: Mahoning Township / City: Youngstown

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 01/05/20 Quantity: 0.16 in

Photograph Information: 451-upstream, 452-downsteam 453-substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 30%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: NA

Field Measures: Temp (°C) NA Dissolved Oxygen (mg/l) NA pH (S.U.) NA Conductivity (µmhos/cm) NA

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☐ Unstable ☑

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

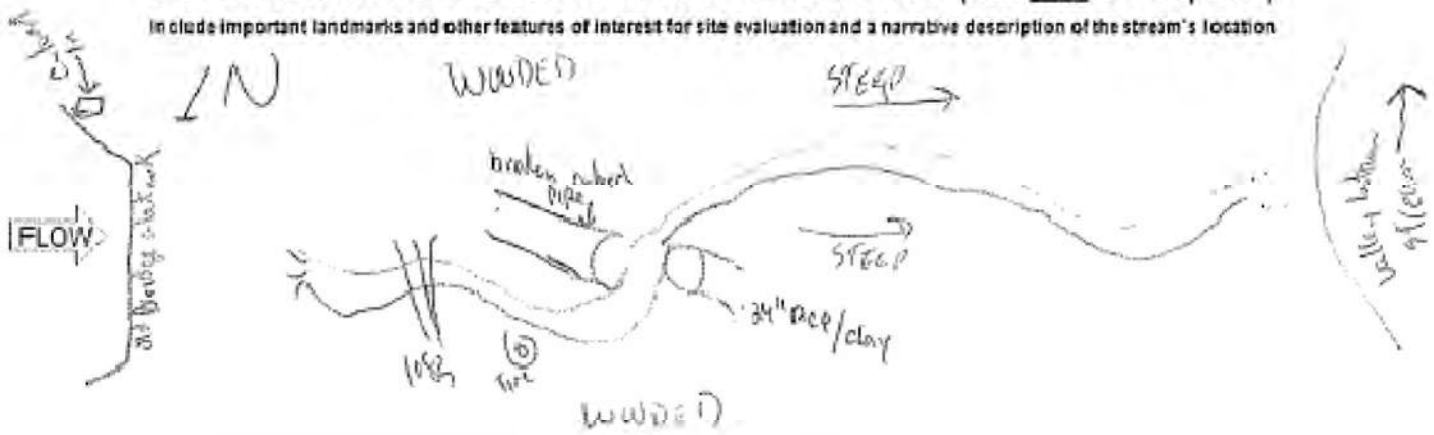
Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

none observed

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



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Stream RLP-08 Class 1

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 27

SITE NAME/LOCATION: Youngstown 138kV Reinforcement Project

hh-jbl-20200108-01 SITE NUMBER: 01 RIVER BASIN: Mahoning River DRAINAGE AREA (mi²): 0.0030

LENGTH OF STREAM REACH (ft): 200 LAT.: 41.09282 LONG.: -80.61554 RIVER CODE: NA RIVER MILE: NA

DATE: 01/08/20 SCORER: JTT, JBL COMMENTS: Ephemeral

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]	0%	☑ ☐	SILT [3 pt]	40%
☐ ☐	BOULDER (>256 mm) [16 pts]	1%	☐ ☐	LEAF PACK/WOODY DEBRIS [3 pts]	9%
☐ ☐	BEDROCK [16 pt]	0%	☐ ☐	FINE DETRITUS [3 pts]	0%
☐ ☐	COBBLE (65-256 mm) [12 pts]	0%	☐ ☐	CLAY or HARDPAN [0 pt]	0%
☐ ☑	GRAVEL (2-64 mm) [9 pts]	30%	☐ ☐	MUCK [0 pts]	0%
☐ ☐	SAND (<2 mm) [6 pts]	20%	☐ ☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 1.00% (A) 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 5

HHEI Metric Points

Substrate Max = 40: 17

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: MAXIMUM POOL DEPTH (Inches): 1.00

Pool Depth Max = 30: 5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: AVERAGE BANKFULL WIDTH (Feet): 1.50

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: Stream cuts through steep hillslope

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☑ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☑ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run Distance from Evaluated Stream 550 ft

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: NA NRCS Soil Map Stream Order NA

County: Mahoning Township / City: Youngstown

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 01/05/20 Quantity: 0.16in

Photograph Information: 3 photos, upstream, downsteam and substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 80%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: NA

Field Measures: Temp (°C) NA Dissolved Oxygen (mg/l) NA pH (S.U.) NA Conductivity (µmhos/cm) NA

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

Overall Stability of BOTH Stream Banks (check one): Stable ☐ **Moderately Stable** ☐ **Unstable** ☑

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

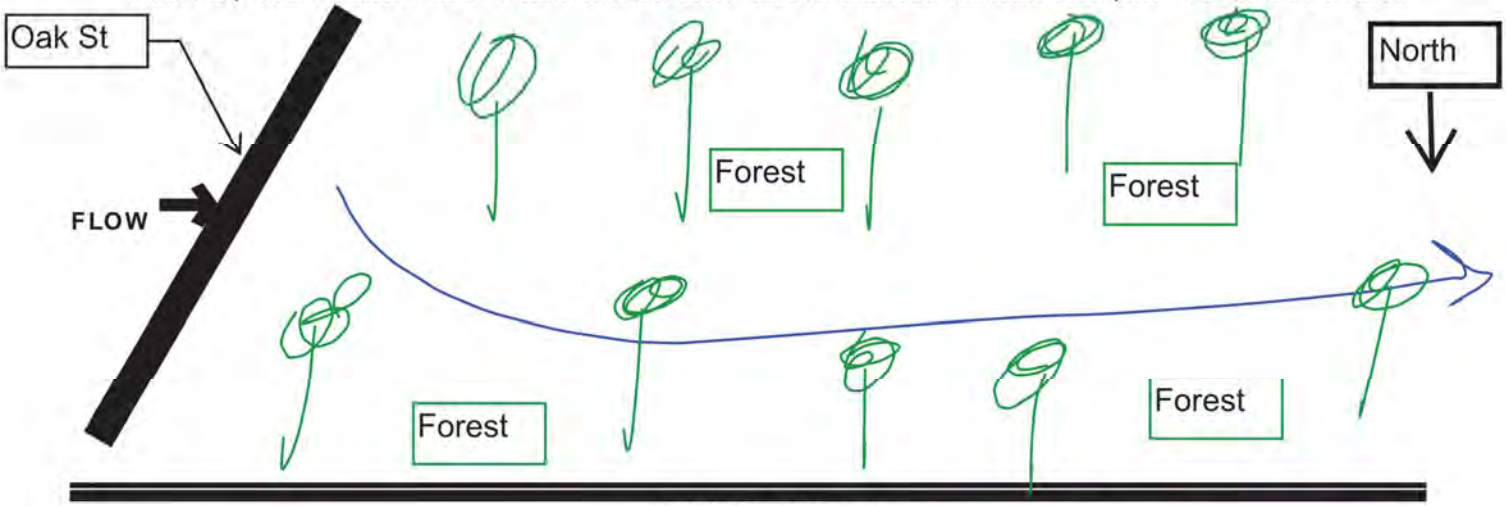
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



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Stream RLP-09 Modified Class 1

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 23

SITE NAME/LOCATION: Youngstown 138kV Reinforcement Project

hh-jbl-20200106-01 SITE NUMBER: 01 RIVER BASIN: Mahoning River DRAINAGE AREA (mi²): < .01

LENGTH OF STREAM REACH (ft): 200 LAT.: 41.09396 LONG.: -80.61308 RIVER CODE: NA RIVER MILE: NA

DATE: 01/06/20 SCORER: jbl,jtt COMMENTS: Ephemeral

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY

extensive garbage dumping

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]	0%	☐☐	SILT [3 pt]	10%
☐☐	BOULDER (>256 mm) [16 pts]	5%	☐☑	LEAF PACK/WOODY DEBRIS [3 pts]	30%
☐☐	BEDROCK [16 pt]	0%	☐☐	FINE DETRITUS [3 pts]	0%
☐☐	COBBLE (65-256 mm) [12 pts]	20%	☐☐	CLAY or HARDPAN [0 pt]	0%
☐☐	GRAVEL (2-64 mm) [9 pts]	5%	☐☐	MUCK [0 pts]	0%
☐☐	SAND (<2 mm) [6 pts]	5%	☑☐	ARTIFICIAL [3 pts]	25%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 25.00% (A) 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 TOTAL NUMBER OF SUBSTRATE TYPES: 7

HHEI Metric Points

Substrate Max = 40: 13

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: MAXIMUM POOL DEPTH (Inches): 1.00

Pool Depth Max = 30: 5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: AVERAGE BANKFULL WIDTH (Feet): 3.00

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☑ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS: recent rain

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☑ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run Distance from Evaluated Stream 290 ft

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: NA NRCS Soil Map Stream Order NA

County: Mahoning Township / City: Youngstown

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 01/05/20 Quantity: 0.16 in

Photograph Information: 3 photos, upstream, downsteam and substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 20%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: NA

Field Measures: Temp (°C) NA Dissolved Oxygen (mg/l) NA pH (S.U.) NA Conductivity (µmhos/cm) NA

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☑ Unstable ☐

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

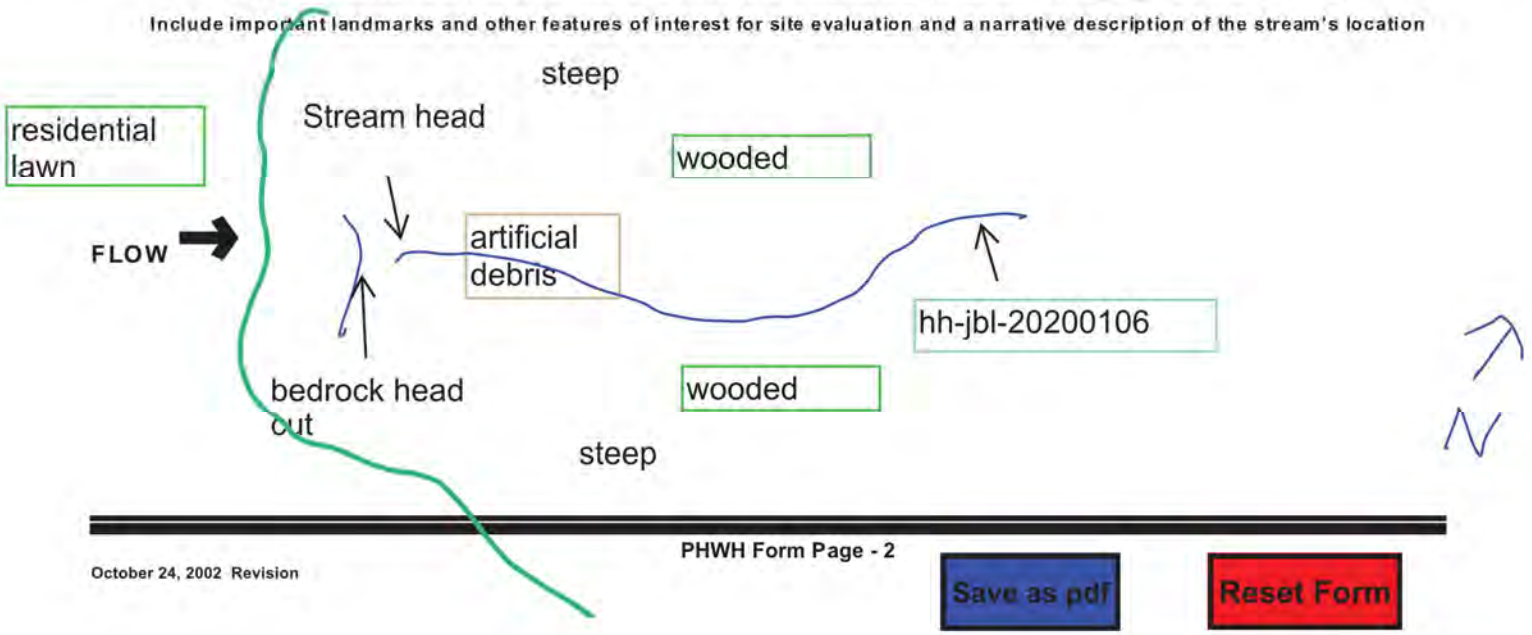
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



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Stream RLP-10 Modified Class 2

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 67

SITE NAME/LOCATION: Youngstown 138kV Reinforcement Project

hh-jbl-20200106-02 SITE NUMBER: 02 RIVER BASIN: Mahoning River DRAINAGE AREA (mi²): 0.00

LENGTH OF STREAM REACH (ft): 200 LAT.: 41.09427 LONG.: -80.61283 RIVER CODE: NA RIVER MILE: NA

DATE: 01/06/20 SCORER: jbl,jtt COMMENTS: intermittent

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY
extensive garbage dumping, old culvert

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]	0%	☐ ☐	SILT [3 pt]	5%
☐ ☐	BOULDER (>256 mm) [16 pts]	5%	☐ ☐	LEAF PACK/WOODY DEBRIS [3 pts]	15%
☐ ☐	BEDROCK [16 pt]	0%	☐ ☐	FINE DETRITUS [3 pts]	0%
☑ ☐	COBBLE (65-256 mm) [12 pts]	20%	☐ ☐	CLAY or HARDPAN [0 pt]	0%
☐ ☐	GRAVEL (2-64 mm) [9 pts]	15%	☐ ☐	MUCK [0 pts]	0%
☐ ☐	SAND (<2 mm) [6 pts]	5%	☐ ☑	ARTIFICIAL [3 pts]	35%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 25.00% (A) 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 TOTAL NUMBER OF SUBSTRATE TYPES: 7

HHEI Metric Points

Substrate Max = 40: 22

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☑ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: MAXIMUM POOL DEPTH (Inches): 4.00

Pool Depth Max = 30: 25

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☑ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: AVERAGE BANKFULL WIDTH (Feet): 7.00

Bankfull Width Max=30: 20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L R	FLOODPLAIN QUALITY (Most Predominant per Bank) L R	L R
☑ ☑ Wide >10m	☑ ☑ Mature Forest, Wetland	☐ ☐ Conservation Tillage
☐ ☐ Moderate 5-10m	☐ ☐ Immature Forest, Shrub or Old Field	☐ ☐ Urban or Industrial
☐ ☐ Narrow <5m	☐ ☐ Residential, Park, New Field	☐ ☐ Open Pasture, Row Crop
☐ ☐ None	☐ ☐ Fenced Pasture	☐ ☐ Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS: recent rain

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☑ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run Distance from Evaluated Stream 270 ft

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Mahoning Township / City: Youngstown

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 01/05/20 Quantity: _____

Photograph Information: 3 photos, upstream, downsteam and substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 10%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☐ Unstable ☑

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

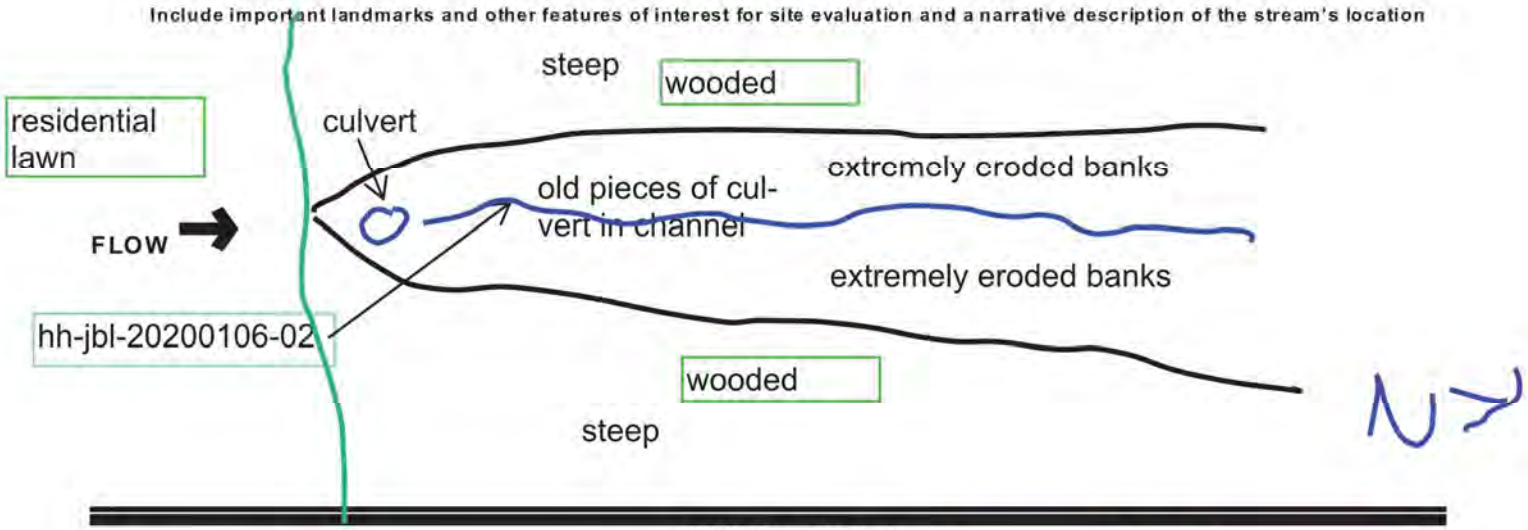
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Save as pdf Reset Form

Stream RLP-11 Modified Class 1

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 27

SITE NAME/LOCATION Youngstown 138kV Reinforcement Project

hh-jbl-20200106-03 SITE NUMBER 03 RIVER BASIN Mahoning River DRAINAGE AREA (mi²) 0.00

LENGTH OF STREAM REACH (ft) 200 LAT. 41.09434 LONG. -80.61181 RIVER CODE NA RIVER MILE NA

DATE 01/06/20 SCORER jbl,jtt COMMENTS ephemeral

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY

garbage dumping

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]	0%	☐ ☐	SILT [3 pt]	15%
☐ ☐	BOULDER (>256 mm) [16 pts]	2%	☐ ☑	LEAF PACK/WOODY DEBRIS [3 pts]	30%
☐ ☐	BEDROCK [16 pt]	0%	☐ ☐	FINE DETRITUS [3 pts]	0%
☑ ☐	COBBLE (65-256 mm) [12 pts]	20%	☐ ☐	CLAY or HARDPAN [0 pt]	0%
☐ ☐	GRAVEL (2-64 mm) [9 pts]	13%	☐ ☐	MUCK [0 pts]	0%
☐ ☐	SAND (<2 mm) [6 pts]	5%	☐ ☐	ARTIFICIAL [3 pts]	15%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 22.00% (A) 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 TOTAL NUMBER OF SUBSTRATE TYPES: 7

HHEI Metric Points

Substrate Max = 40: 22

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS MAXIMUM POOL DEPTH (Inches): 0.00

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS AVERAGE BANKFULL WIDTH (Feet): 1.50

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS recent rain

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☑ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☑ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run Distance from Evaluated Stream 450 ft

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: NA NRCS Soil Map Stream Order NA

County: Mahoning Township / City: Youngstown

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 01/05/20 Quantity: 0.16 in

Photograph Information: 3 photos, upstream, downsteam and substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 10%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: NA

Field Measures: Temp (°C) NA Dissolved Oxygen (mg/l) NA pH (S.U.) NA Conductivity (µmhos/cm) NA

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☑ Unstable ☐

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

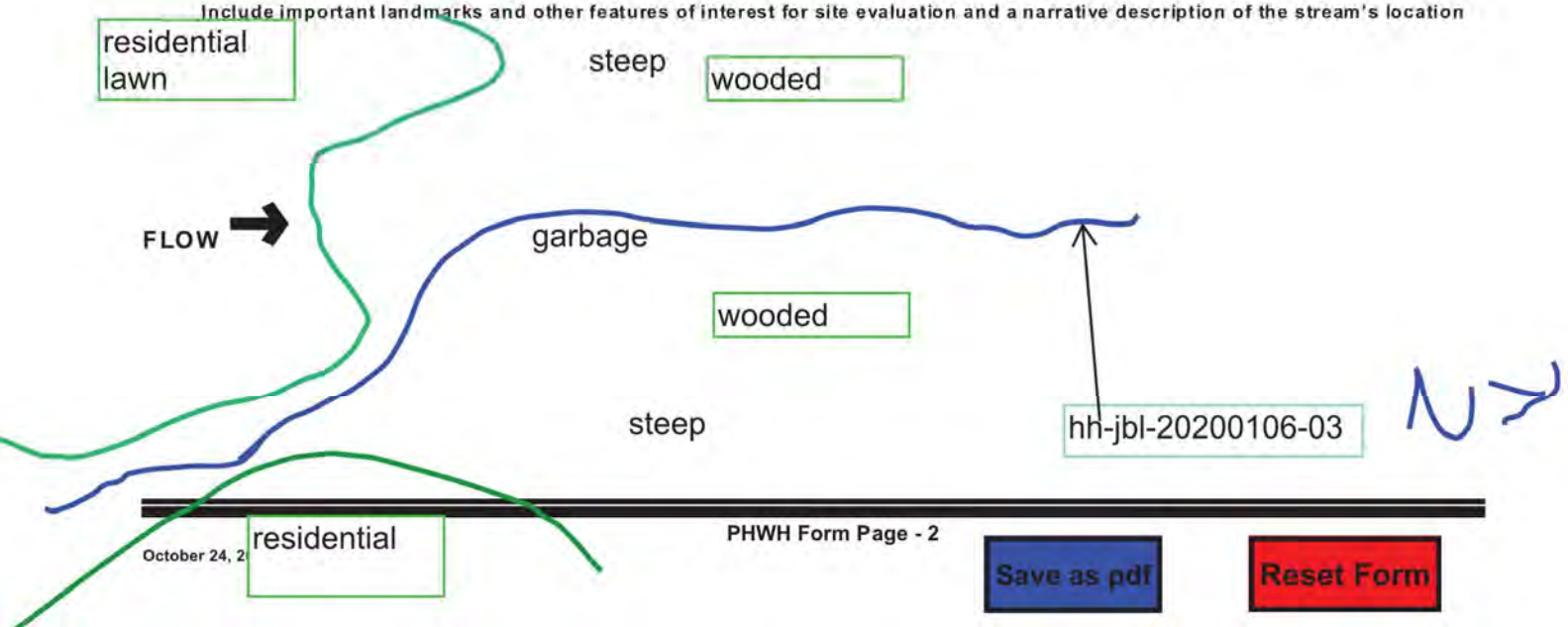
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Save as pdf Reset Form

Stream RLP 12 — Modified Class 1

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 27

SITE NAME/LOCATION: Youngstown 138kV Reinforcement Project

hh-jbl-20200106-04 | SITE NUMBER: 04 | RIVER BASIN: Mahoning River | DRAINAGE AREA (mi²): <0.01

LENGTH OF STREAM REACH (ft): 200 | LAT.: 41.09533 | LONG.: -80.61095 | RIVER CODE: NA | RIVER MILE: NA

DATE: 01/06/20 | SCORER: jbl,jtt | COMMENTS: ephemeral; has a side channel at top

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY
tires, smell of sewage

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]	0%	☐☐	SILT [3 pt]	15%
☐☐	BOULDER (>256 mm) [16 pts]	2%	☑☐	LEAF PACK/WOODY DEBRIS [3 pts]	45%
☐☐	BEDROCK [16 pt]	0%	☐☐	FINE DETRITUS [3 pts]	0%
☐☑	COBBLE (65-256 mm) [12 pts]	18%	☐☐	CLAY or HARDPAN [0 pt]	0%
☐☐	GRAVEL (2-64 mm) [9 pts]	10%	☐☐	MUCK [0 pts]	0%
☐☐	SAND (<2 mm) [6 pts]	5%	☐☐	ARTIFICIAL [3 pts]	5%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 20.00% (A) — 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 — TOTAL NUMBER OF SUBSTRATE TYPES: 7

HHEI Metric Points

Substrate Max = 40: 22

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: | MAXIMUM POOL DEPTH (Inches): 0.00

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: | AVERAGE BANKFULL WIDTH (Feet): 2.00

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L R	FLOODPLAIN QUALITY (Most Predominant per Bank) L R	
☐☐ Wide >10m	☐☐ Mature Forest, Wetland	☐☐ Conservation Tillage
☑☑ Moderate 5-10m	☑☑ Immature Forest, Shrub or Old Field	☐☐ Urban or Industrial
☐☐ Narrow <5m	☐☐ Residential, Park, New Field	☐☐ Open Pasture, Row Crop
☐☐ None	☐☐ Fenced Pasture	☐☐ Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS: recent rain

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☑ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☑ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: NA NRCS Soil Map Stream Order NA

County: Mahoning Township / City: Youngstown

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 01/05/20 Quantity: 0.16 in

Photograph Information: 3 photos, upstream, downsteam and substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 10%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: NA

Field Measures: Temp (°C) NA Dissolved Oxygen (mg/l) NA pH (S.U.) NA Conductivity (µmhos/cm) NA

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☐ Unstable ☑

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

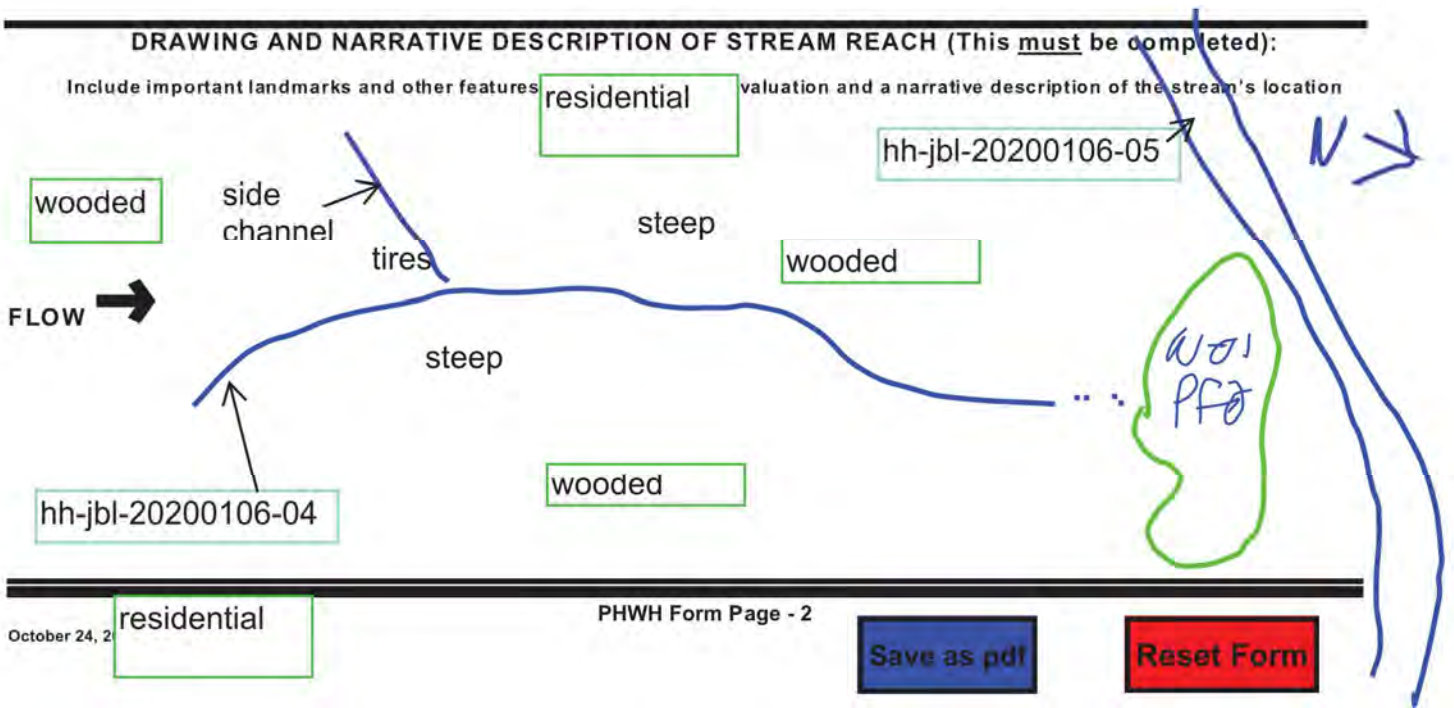
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features valuation and a narrative description of the stream's location



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Stream RLP-13 Class 2

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 65

SITE NAME/LOCATION Youngstown 138kV Reinforcement Project

hh-jbl-20200106-05 SITE NUMBER 05 RIVER BASIN Mahoning River DRAINAGE AREA (mi²) 0.52

LENGTH OF STREAM REACH (ft) 200 LAT. 41.09592 LONG. -80.61050 RIVER CODE NA RIVER MILE NA

DATE 01/06/20 SCORER jbl,jtt COMMENTS Perennial

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

smell of treated water, trash and debris along hillside, culverted outside of survey corridor

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	20%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	20%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2-64 mm) [9 pts]	30%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	25%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 20.00% (A) 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 TOTAL NUMBER OF SUBSTRATE TYPES: 5

HHEI Metric Points

Substrate Max = 40: 20

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☑ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS MAXIMUM POOL DEPTH (Inches): 6.00

Pool Depth Max = 30: 25

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☑ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS AVERAGE BANKFULL WIDTH (Feet): 7.00

Bankfull Width Max=30: 20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☐	Wide >10m	☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☑	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS recent rain

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☑ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run Distance from Evaluated Stream 980 ft

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: NA NRCS Soil Map Stream Order NA

County: Mahoning Township / City: Youngstown

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 01/05/20 Quantity: 0.16 in

Photograph Information: 3 photos, upstream, downsteam and substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 10%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: NA

Field Measures: Temp (°C) NA Dissolved Oxygen (mg/l) NA pH (S.U.) NA Conductivity (µmhos/cm) NA

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☑ Unstable ☐

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

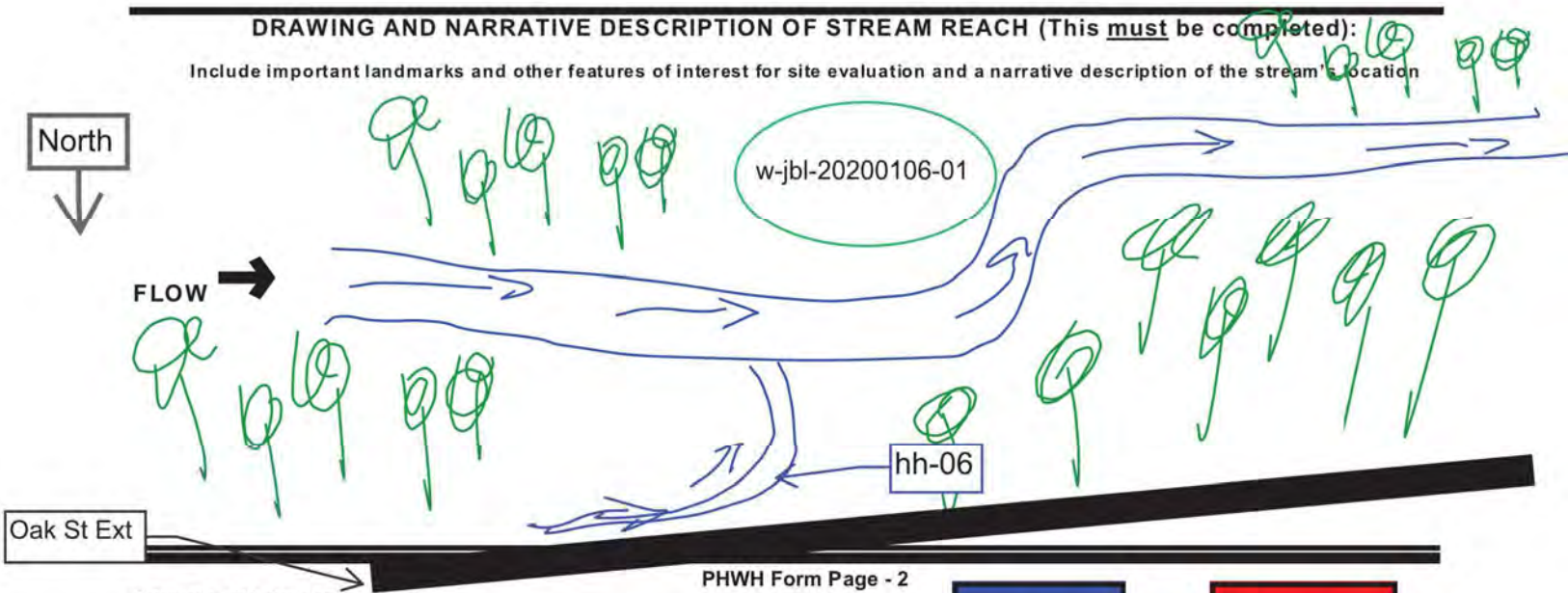
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



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Stream RLP-14 Modified Class 2

Ohio EPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 41

SITE NAME/LOCATION: Youngstown 138kV Reinforcement Project

hh-jbl-20200106-06 SITE NUMBER: 06 RIVER BASIN: Mahoning River DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 41.09648 LONG.: -80.60866 RIVER CODE: RIVER MILE:

DATE: 01/06/20 SCORER: jbl,jtt COMMENTS: intermittent

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY

channelized near road, trash

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]	0%	☐☐	SILT [3 pt]	15%
☐☐	BOULDER (>256 mm) [16 pts]	0%	☑☐	LEAF PACK/WOODY DEBRIS [3 pts]	25%
☐☐	BEDROCK [16 pt]	0%	☐☐	FINE DETRITUS [3 pts]	0%
☐☑	COBBLE (65-256 mm) [12 pts]	25%	☐☐	CLAY or HARDPAN [0 pt]	0%
☐☐	GRAVEL (2-64 mm) [9 pts]	20%	☐☐	MUCK [0 pts]	0%
☐☐	SAND (<2 mm) [6 pts]	10%	☐☐	ARTIFICIAL [3 pts]	5%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 25.00% (A) 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 TOTAL NUMBER OF SUBSTRATE TYPES: 6

HHEI Metric Points

Substrate Max = 40: 21

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☑ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: MAXIMUM POOL DEPTH (Inches): 2.00

Pool Depth Max = 30: 15

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: AVERAGE BANKFULL WIDTH (Feet): 2.50

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☑	Immature Forest, Shrub or Old Field	☑	☐	Urban or Industrial
☐	☑	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS: recent rain

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☑ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☑ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run Distance from Evaluated Stream 0.20

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Mahoning Township / City: Youngstown

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 01/05/20 Quantity: _____

Photograph Information: 3 photos, upstream, downsteam and substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 20%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

Overall Stability of BOTH Stream Banks (check one): Stable ☐ **Moderately Stable** ☐ **Unstable** ☑

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

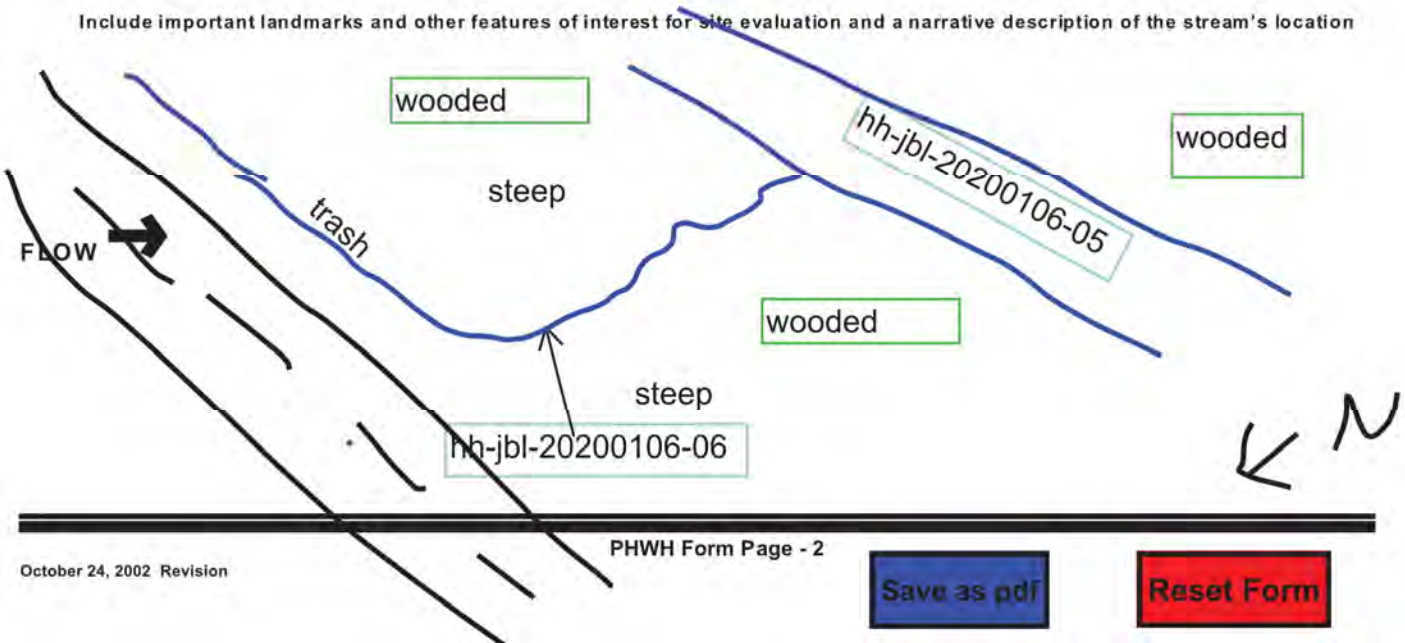
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



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Stream RLP-15 Modified Class 2

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 47

SITE NAME/LOCATION: Youngstown 138kV Reinforcement Project

hh-jbl-20200107-01 SITE NUMBER: 01 RIVER BASIN: Mahoning River DRAINAGE AREA (mi²): 0.07

LENGTH OF STREAM REACH (ft): 200 LAT.: 41.09770 LONG.: -80.60457 RIVER CODE: NA RIVER MILE: NA

DATE: 01/06/20 SCORER: jbl,jtt COMMENTS: intermittent

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY

culvert

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]	0%	☐ ☐	SILT [3 pt]	10%
☐ ☐	BOULDER (>256 mm) [16 pts]	0%	☐ ☐	LEAF PACK/WOODY DEBRIS [3 pts]	15%
☐ ☐	BEDROCK [16 pt]	0%	☐ ☐	FINE DETRITUS [3 pts]	0%
☑ ☐	COBBLE (65-256 mm) [12 pts]	25%	☐ ☐	CLAY or HARDPAN [0 pt]	0%
☐ ☑	GRAVEL (2-64 mm) [9 pts]	25%	☐ ☐	MUCK [0 pts]	0%
☐ ☐	SAND (<2 mm) [6 pts]	10%	☐ ☐	ARTIFICIAL [3 pts]	15%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 25.00% (A) 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 21 TOTAL NUMBER OF SUBSTRATE TYPES: 6

HHEI Metric Points

Substrate Max = 40: 27

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☑ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: MAXIMUM POOL DEPTH (Inches): 3.00

Pool Depth Max = 30: 15

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: AVERAGE BANKFULL WIDTH (Feet): 3.00

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐ Conservation Tillage
☑	☐	Moderate 5-10m	☑	☐	Immature Forest, Shrub or Old Field	☐	☑ Urban or Industrial
☐	☑	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐ Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐ Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS: recent rain

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☑ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run Distance from Evaluated Stream 0.5 mi

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: NA NRCS Soil Map Stream Order NA

County: Mahoning Township / City: Youngstown

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 01/05/20 Quantity: 0.16 in

Photograph Information: 3 photos, upstream, downsteam and substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 50%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: NA

Field Measures: Temp (°C) NA Dissolved Oxygen (mg/l) NA pH (S.U.) NA Conductivity (µmhos/cm) NA

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☐ Unstable ☑

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

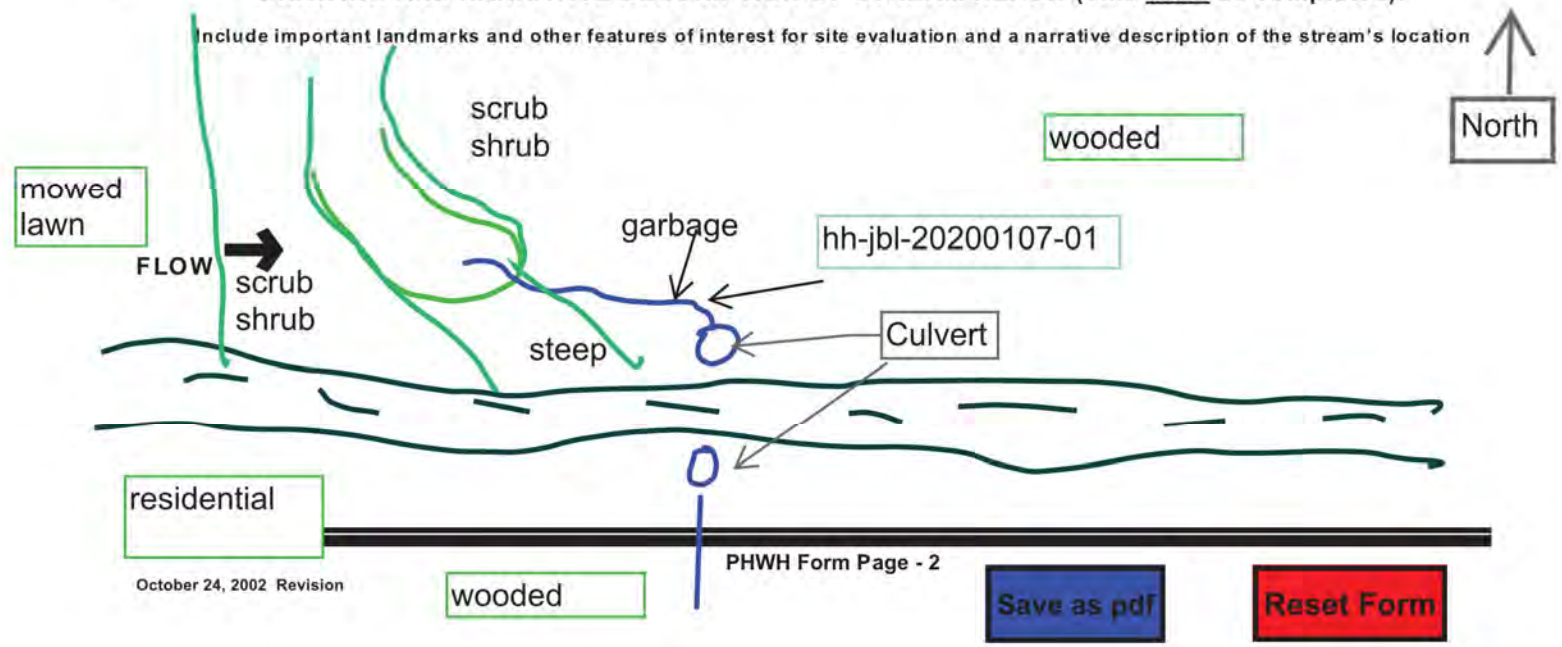
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



October 24, 2002 Revision

Save as pdf Reset Form

Stream RLP-16 | Modified Class 1

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 30

SITE NAME/LOCATION: Youngstown 138kV Reinforcement Project

hh-jbl-20200107-02 | SITE NUMBER: 02 | RIVER BASIN: Mahoning River | DRAINAGE AREA (mi²): 0.04

LENGTH OF STREAM REACH (ft): 200 | LAT.: 41.09795 | LONG.: -80.60351 | RIVER CODE: NA | RIVER MILE: NA

DATE: 01/06/20 | SCORER: jbl,jtt | COMMENTS: intermittent

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY
culvert, trash/debris dumped in channel

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]	0%	☑ ☐	SILT [3 pt]	35%
☐ ☐	BOULDER (>256 mm) [16 pts]	0%	☐ ☑	LEAF PACK/WOODY DEBRIS [3 pts]	25%
☐ ☐	BEDROCK [16 pt]	0%	☐ ☐	FINE DETRITUS [3 pts]	0%
☐ ☐	COBBLE (65-256 mm) [12 pts]	0%	☐ ☐	CLAY or HARDPAN [0 pt]	0%
☐ ☐	GRAVEL (2-64 mm) [9 pts]	5%	☐ ☐	MUCK [0 pts]	0%
☐ ☐	SAND (<2 mm) [6 pts]	10%	☐ ☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) | 75% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 | TOTAL NUMBER OF SUBSTRATE TYPES: 4

HHEI Metric Points

Substrate Max = 40: 10

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☑ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: | MAXIMUM POOL DEPTH (Inches): 2.00

Pool Depth Max = 30: 15

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: | AVERAGE BANKFULL WIDTH (Feet): 2.00

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L R	FLOODPLAIN QUALITY (Most Predominant per Bank) L R	L R
☐ ☐ Wide >10m	☐ ☐ Mature Forest, Wetland	☐ ☐ Conservation Tillage
☑ ☑ Moderate 5-10m	☑ ☑ Immature Forest, Shrub or Old Field	☐ ☐ Urban or Industrial
☐ ☐ Narrow <5m	☐ ☐ Residential, Park, New Field	☐ ☐ Open Pasture, Row Crop
☐ ☐ None	☐ ☐ Fenced Pasture	☐ ☐ Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☑ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS: recent rain

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☑ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run Distance from Evaluated Stream 0.6 mi

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: NA NRCS Soil Map Stream Order NA

County: Mahoning Township / City: Youngstown

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 01/05/20 Quantity: 0.16 in

Photograph Information: 3 photos, upstream, downsteam and substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 50%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: NA

Field Measures: Temp (°C) NA Dissolved Oxygen (mg/l) NA pH (S.U.) NA Conductivity (µmhos/cm) NA

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☐ Unstable ☑

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

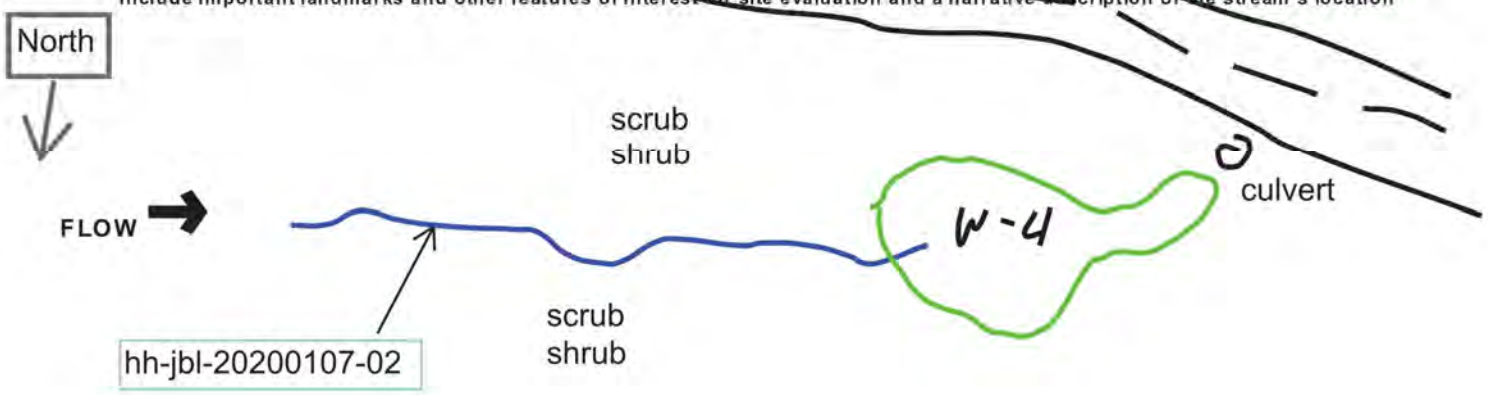
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be c wooded

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



October 24, 2002 Revision

wooded

Save as pdf Reset Form

Stream RLP-17 Mod :Class 2

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 46

SITE NAME/LOCATION Youngstown 138kV Reinforcement Project

s-bl-20200108 SITE NUMBER 01 RIVER BASIN Dry Run-Mahoning DRAINAGE AREA (mi²) 0.11

LENGTH OF STREAM REACH (ft) 200 LAT. 41.09782 LONG. -80.59838 RIVER CODE _____ RIVER MILE 0.53

DATE 01/08/20 SCORER BL, RM COMMENTS intermittent

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY

culvert at downstream end under road, too small for high flow passage

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]	0%	☐ ☑	SILT [3 pt]	30%
☐ ☐	BOULDER (>256 mm) [16 pts]	0%	☐ ☐	LEAF PACK/WOODY DEBRIS [3 pts]	10%
☐ ☐	BEDROCK [16 pt]	0%	☐ ☐	FINE DETRITUS [3 pts]	0%
☐ ☐	COBBLE (65-256 mm) [12 pts]	0%	☐ ☐	CLAY or HARDPAN [0 pt]	0%
☑ ☐	GRAVEL (2-64 mm) [9 pts]	40%	☐ ☐	MUCK [0 pts]	0%
☐ ☐	SAND (<2 mm) [6 pts]	20%	☐ ☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 0.00% (A) 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 4

HHEI Metric Points

Substrate Max = 40: 16

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☑ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS 10 cm max pool depth; OWHM=1.3'w x 0.3'd MAXIMUM POOL DEPTH (Inches): 3.00

Pool Depth Max = 30: 15

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☑ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS BF=4.1'w x 0.9'd AVERAGE BANKFULL WIDTH (Feet): 4.10

Bankfull Width Max=30: 15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☑	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS scrubby woods all around w/wetland along LDB

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS intermittent flow regime

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None	☑ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run Distance from Evaluated Stream 0.9

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: NA NRCS Soil Map Stream Order NA

County: Mahoning Township / City: Youngstown

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 01/05/20 Quantity: 0.16 in

Photograph Information: 420-upstream, 421-downsteam 422-substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 30%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: NA

Field Measures: Temp (°C) NA Dissolved Oxygen (mg/l) NA pH (S.U.) NA Conductivity (µmhos/cm) NA

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

Overall Stability of BOTH Stream Banks (check one): Stable ☑ **Moderately Stable** ☐ **Unstable** ☐

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

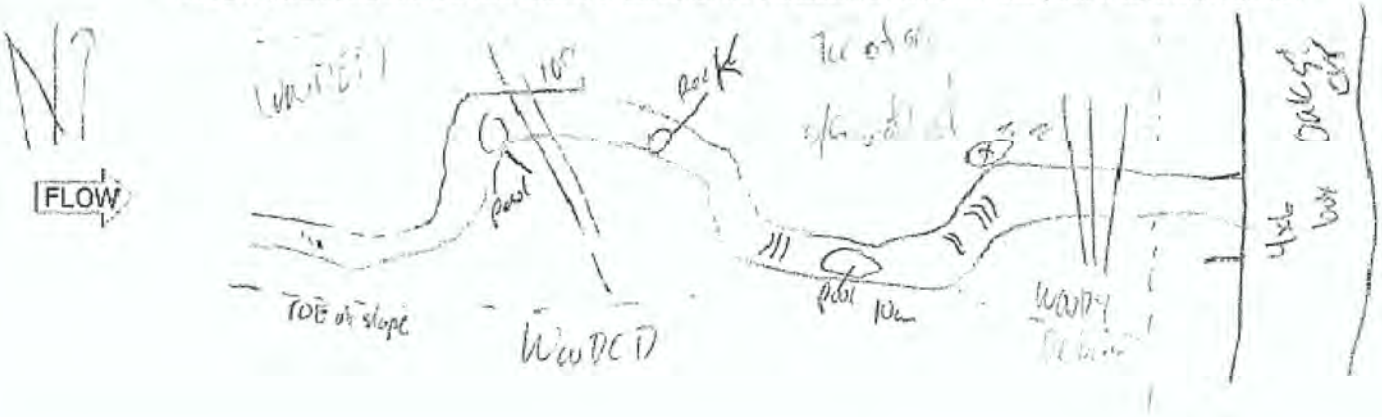
Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

none observed

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Save as pdf Reset Form

Stream RLP-18 Class 1

Ohio EPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 26

SITE NAME/LOCATION: Youngstown 138kV Reinforcement Project

hh-aeh-20200107-07 SITE NUMBER: NA RIVER BASIN: Dry Run-Mahoning DRAINAGE AREA (mi²): 0.10

LENGTH OF STREAM REACH (ft): 200 LAT.: 41.09685 LONG.: -80.60306 RIVER CODE: NA RIVER MILE: NA

DATE: 01/07/20 SCORER: AEH/SKM COMMENTS: intermittent

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

Culverted

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☑	SILT [3 pt]	50%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	10%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	5%
☑	GRAVEL (2-64 mm) [9 pts]	35%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 4

HHEI Metric Points

Substrate Max = 40: 16

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: MAXIMUM POOL DEPTH (Inches): 0.50

Pool Depth Max = 30: 5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: AVERAGE BANKFULL WIDTH (Feet): 2.00

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☑ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run Distance from Evaluated Stream 0.50

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Mahoning Township / City: Youngstown

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 01/06/20 Quantity: 0.01

Photograph Information: 3 photos, upstream, downsteam and substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 15%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☐ Unstable ☑

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

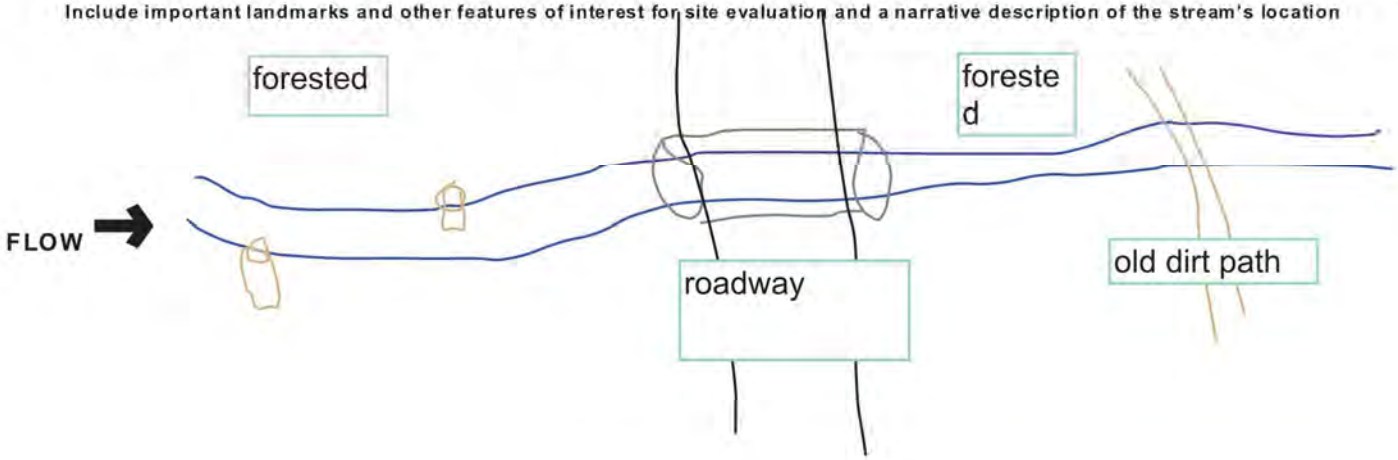
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Save as pdf Reset Form

Stream RLP-19 Class 1

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 19

SITE NAME/LOCATION Youngstown 138kV Reinforcement Project

hh-aeh-20200107-08 SITE NUMBER NA RIVER BASIN Dry Run-Mahoning DRAINAGE AREA (mi²) 0.10

LENGTH OF STREAM REACH (ft) 200 LAT. 41.09613 LONG. -80.60301 RIVER CODE NA RIVER MILE NA

DATE 01/07/20 SCORER AEH/SKM COMMENTS ephemeral

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

Culverted

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]	0%	☐ ☑	SILT [3 pt]	50%
☐ ☐	BOULDER (>256 mm) [16 pts]	0%	☑ ☐	LEAF PACK/WOODY DEBRIS [3 pts]	35%
☐ ☐	BEDROCK [16 pt]	0%	☐ ☐	FINE DETRITUS [3 pts]	0%
☐ ☐	COBBLE (65-256 mm) [12 pts]	0%	☐ ☐	CLAY or HARDPAN [0 pt]	0%
☐ ☐	GRAVEL (2-64 mm) [9 pts]	0%	☐ ☐	MUCK [0 pts]	0%
☐ ☐	SAND (<2 mm) [6 pts]	15%	☐ ☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 0.00% (A) 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 TOTAL NUMBER OF SUBSTRATE TYPES: 3

HHEI Metric Points

Substrate Max = 40: 9

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ > 5 cm - 10 cm [15 pts]
☑ < 5 cm [5 pts]
☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS MAXIMUM POOL DEPTH (Inches): 0.50

Pool Depth Max = 30: 5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

☐ > 4.0 meters (> 13') [30 pts]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS AVERAGE BANKFULL WIDTH (Feet): 0.50

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L R	FLOODPLAIN QUALITY (Most Predominant per Bank) L R	L R
☑ ☑ Wide >10m	☐ ☐ Mature Forest, Wetland	☐ ☐ Conservation Tillage
☐ ☐ Moderate 5-10m	☑ ☑ Immature Forest, Shrub or Old Field	☐ ☐ Urban or Industrial
☐ ☐ Narrow <5m	☐ ☐ Residential, Park, New Field	☐ ☐ Open Pasture, Row Crop
☐ ☐ None	☐ ☐ Fenced Pasture	☐ ☐ Mining or Construction

COMMENTS

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☑ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None ☑ 1.0 ☐ 2.0 ☐ 3.0
☐ 0.5 ☐ 1.5 ☐ 2.5 ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run Distance from Evaluated Stream 0.50

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Mahoning Township / City: Youngstown

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 01/06/20 Quantity: 0.01

Photograph Information: 3 photos, upstream, downsteam and substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 30%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☐ Unstable ☑

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

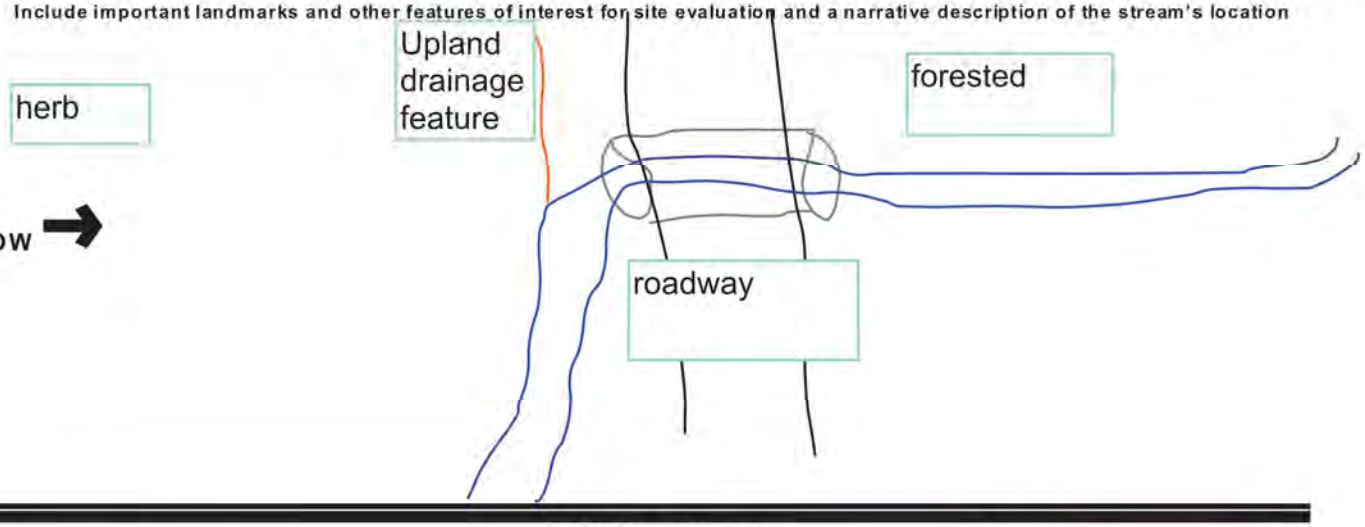
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



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Stream RLP-20 Class 2

Ohio EPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 69

SITE NAME/LOCATION: Youngstown 138kV Reinforcement Project

hh-aeh-20200107-09 SITE NUMBER: NA RIVER BASIN: Dry Run-Mahoning DRAINAGE AREA (mi²): 0.24

LENGTH OF STREAM REACH (ft): 200 LAT.: 41.09476 LONG.: -80.60300 RIVER CODE: NA RIVER MILE: NA

DATE: 01/07/20 SCORER: AEH/SKM COMMENTS: perennial, NHD mapped tributary to Dry Run

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

Culverted

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	35%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	10%
☐	BEDROCK [16 pt]	5%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	5%	☐	CLAY or HARDPAN [0 pt]	5%
☑	GRAVEL (2-64 mm) [9 pts]	35%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	5%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 10.00% (A) 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 7

HHEI Metric Points

Substrate Max = 40: 19

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☑ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: MAXIMUM POOL DEPTH (Inches): 10.00

Pool Depth Max = 30: 30

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☑ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: AVERAGE BANKFULL WIDTH (Feet): 5.00

Bankfull Width Max=30: 20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☑ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run Distance from Evaluated Stream 0.50

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Mahoning Township / City: Youngstown

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 01/06/20 Quantity: 0.01

Photograph Information: 3 photos, upstream, downsteam and substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 85%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☑ Unstable ☐

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

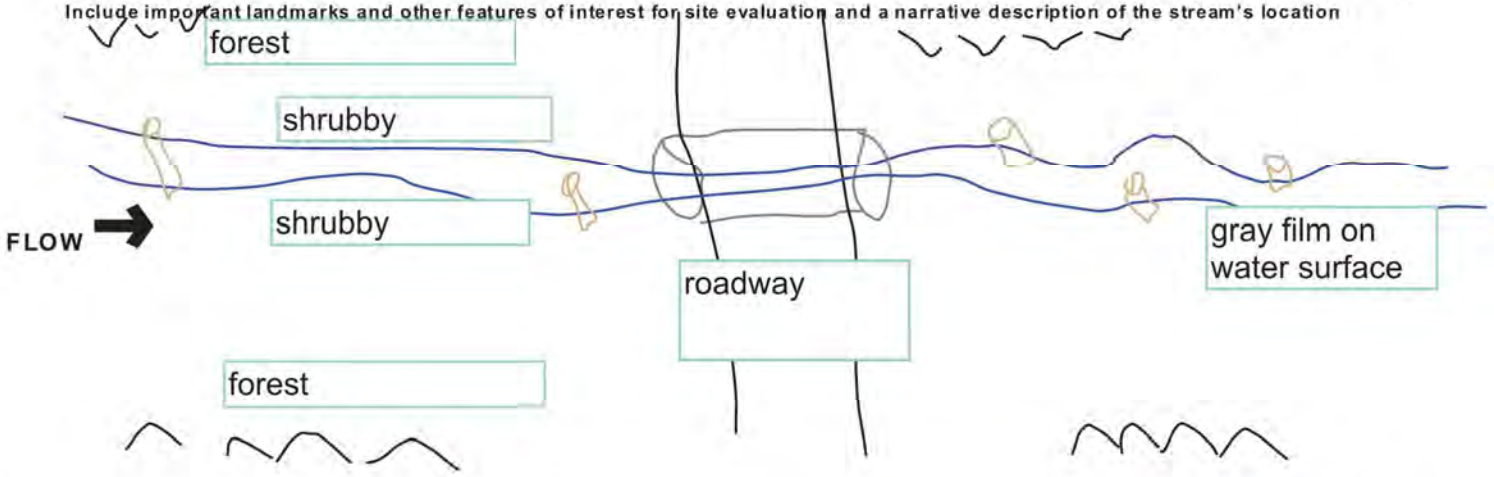
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



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Stream RLP-21 Class 1

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 25

SITE NAME/LOCATION Youngstown 138kV Reinforcement Project

hh-aeh-20200107-10 SITE NUMBER NA RIVER BASIN Dry Run-Mahoning DRAINAGE AREA (mi²) 0.10

LENGTH OF STREAM REACH (ft) 200 LAT. 41.09327 LONG. -80.60296 RIVER CODE NA RIVER MILE NA

DATE 01/07/20 SCORER AEH/SKM COMMENTS intermittent

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

Culverted

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	55%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	10%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2-64 mm) [9 pts]	35%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 0.00% (A) 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 3

HHEI Metric Points

Substrate Max = 40: 15

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS MAXIMUM POOL DEPTH (Inches): 0.50

Pool Depth Max = 30: 5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS AVERAGE BANKFULL WIDTH (Feet): 2.00

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☑	Moderate 5-10m	☐	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☑	☐	Narrow <5m	☑	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☑ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run Distance from Evaluated Stream 0.40

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Mahoning Township / City: Youngstown

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 01/06/20 Quantity: 0.01

Photograph Information: 3 photos, upstream, downsteam and substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 75%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☑ Unstable ☐

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

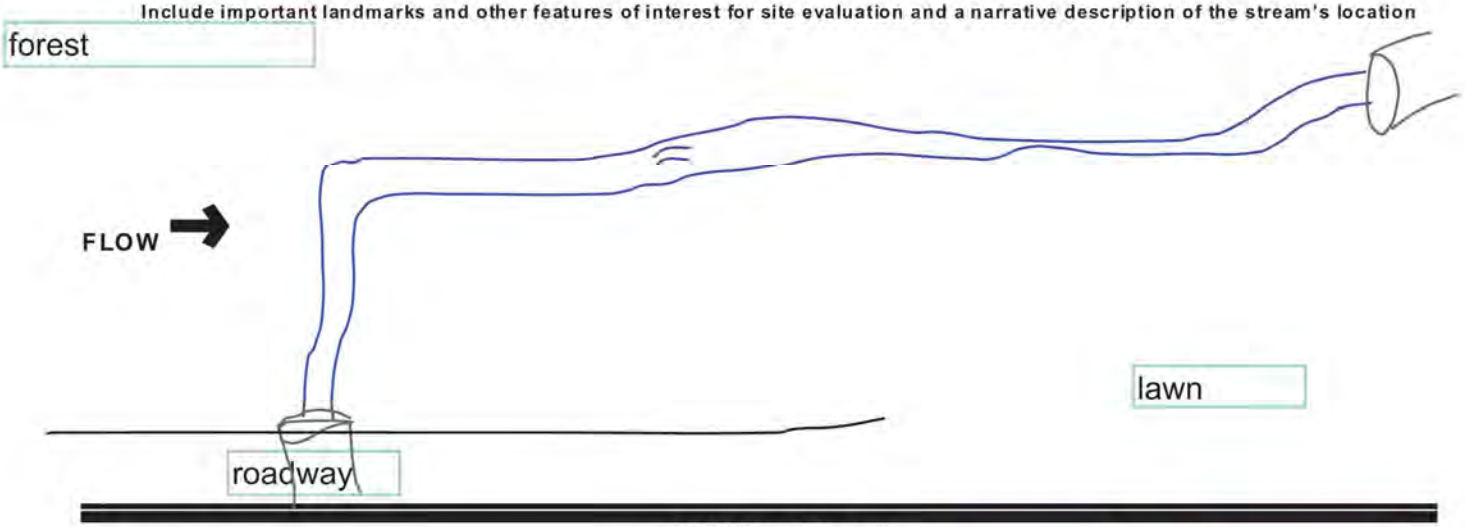
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Save as pdf Reset Form

Stream RLP-22 Class 1

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 19

SITE NAME/LOCATION: Youngstown 138kV Reinforcement Project

hh-aeh-20200107-01 SITE NUMBER: NA RIVER BASIN: Dry Run-Mahoning DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 41.09023 LONG.: -80.61077 RIVER CODE: NA RIVER MILE: NA

DATE: 01/07/20 SCORER: AEH/SKM COMMENTS: Ephemeral

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☑	SILT [3 pt]	65%
☐	BOULDER (>256 mm) [16 pts]	0%	☑	LEAF PACK/WOODY DEBRIS [3 pts]	20%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	15%
☐	GRAVEL (2-64 mm) [9 pts]	0%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 TOTAL NUMBER OF SUBSTRATE TYPES: 3

HHEI Metric Points

Substrate Max = 40: 9

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: MAXIMUM POOL DEPTH (Inches): 0.50

Pool Depth Max = 30: 5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: AVERAGE BANKFULL WIDTH (Feet): 0.50

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☑ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run Distance from Evaluated Stream 0.45

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Mahoning Township / City: Youngstown

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 01/06/20 Quantity: 0.01

Photograph Information: 3 photos, upstream, downsteam and substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 90%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Overall Stability of BOTH Stream Banks (check one): Stable ☑ Moderately Stable ☐ Unstable ☐

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

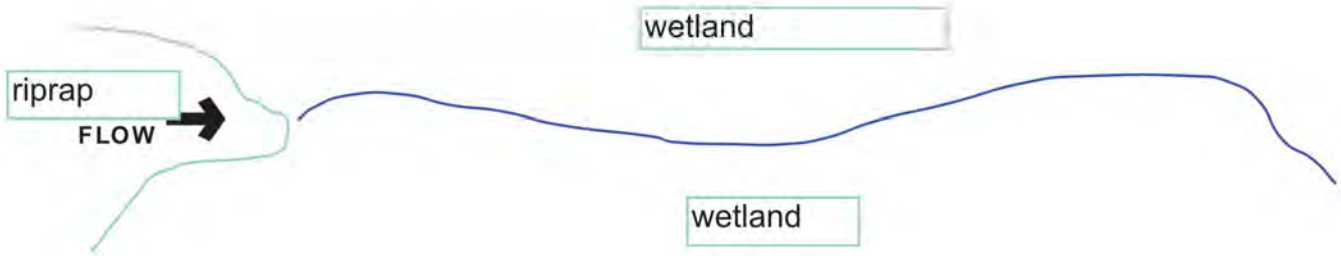
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Save as pdf Reset Form

Stream RLP-23 Class 1

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 19

SITE NAME/LOCATION: Youngstown 138kV Reinforcement Project

hh-aeh-20200107-02 SITE NUMBER: NA RIVER BASIN: Dry Run-Mahoning DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 41.08972 LONG.: -80.61098 RIVER CODE: NA RIVER MILE: NA

DATE: 01/07/20 SCORER: AEH/SKM COMMENTS: Ephemeral

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]	0%	☑ ☐	SILT [3 pt]	75%
☐ ☐	BOULDER (>256 mm) [16 pts]	0%	☐ ☑	LEAF PACK/WOODY DEBRIS [3 pts]	20%
☐ ☐	BEDROCK [16 pt]	0%	☐ ☐	FINE DETRITUS [3 pts]	0%
☐ ☐	COBBLE (65-256 mm) [12 pts]	5%	☐ ☐	CLAY or HARDPAN [0 pt]	0%
☐ ☐	GRAVEL (2-64 mm) [9 pts]	0%	☐ ☐	MUCK [0 pts]	0%
☐ ☐	SAND (<2 mm) [6 pts]	0%	☐ ☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 5.00% (A) 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 TOTAL NUMBER OF SUBSTRATE TYPES: 3

HHEI Metric Points

Substrate Max = 40: 9

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☑	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: MAXIMUM POOL DEPTH (Inches): 0.50

Pool Depth Max = 30: 5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: AVERAGE BANKFULL WIDTH (Feet): 1.00

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L R	FLOODPLAIN QUALITY (Most Predominant per Bank) L R	
☐ ☐ Wide >10m	☐ ☐ Mature Forest, Wetland	☐ ☐ Conservation Tillage
☑ ☑ Moderate 5-10m	☑ ☑ Immature Forest, Shrub or Old Field	☐ ☐ Urban or Industrial
☐ ☐ Narrow <5m	☐ ☐ Residential, Park, New Field	☐ ☐ Open Pasture, Row Crop
☐ ☐ None	☐ ☐ Fenced Pasture	☐ ☐ Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☑ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None ☐ 1.0 ☐ 2.0 ☐ 3.0
☑ 0.5 ☐ 1.5 ☐ 2.5 ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run Distance from Evaluated Stream 0.50

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Mahoning Township / City: Youngstown

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 01/06/20 Quantity: 0.01

Photograph Information: 3 photos, upstream, downsteam and substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 10%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☑ Unstable ☐

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

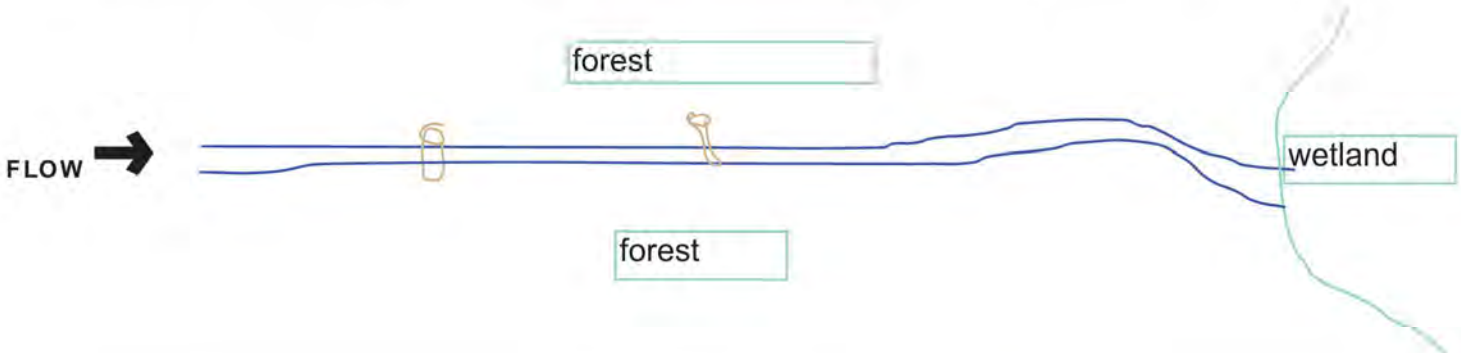
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Save as pdf Reset Form

Stream RLP-24 Class 1

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 13

SITE NAME/LOCATION Youngstown 138kV Reinforcement Project

hh-aeh-20200107-04 SITE NUMBER NA RIVER BASIN Dry Run-Mahoning DRAINAGE AREA (mi²) 0.01

LENGTH OF STREAM REACH (ft) 200 LAT. 41.08945 LONG. -80.61078 RIVER CODE NA RIVER MILE NA

DATE 01/07/20 SCORER AEH/SKM COMMENTS Ephemeral

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]	0%	☑ ☐	SILT [3 pt]	75%
☐ ☐	BOULDER (>256 mm) [16 pts]	0%	☐ ☑	LEAF PACK/WOODY DEBRIS [3 pts]	25%
☐ ☐	BEDROCK [16 pt]	0%	☐ ☐	FINE DETRITUS [3 pts]	0%
☐ ☐	COBBLE (65-256 mm) [12 pts]	0%	☐ ☐	CLAY or HARDPAN [0 pt]	0%
☐ ☐	GRAVEL (2-64 mm) [9 pts]	0%	☐ ☐	MUCK [0 pts]	0%
☐ ☐	SAND (<2 mm) [6 pts]	0%	☐ ☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 0.00% (A) 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 TOTAL NUMBER OF SUBSTRATE TYPES: 2

HHEI Metric Points

Substrate Max = 40: 8

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS MAXIMUM POOL DEPTH (Inches): 0.00

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS AVERAGE BANKFULL WIDTH (Feet): 0.50

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L R	FLOODPLAIN QUALITY (Most Predominant per Bank) L R	L R
☐ ☐ Wide >10m	☐ ☐ Mature Forest, Wetland	☐ ☐ Conservation Tillage
☑ ☑ Moderate 5-10m	☑ ☑ Immature Forest, Shrub or Old Field	☐ ☐ Urban or Industrial
☐ ☐ Narrow <5m	☐ ☐ Residential, Park, New Field	☐ ☐ Open Pasture, Row Crop
☐ ☐ None	☐ ☐ Fenced Pasture	☐ ☐ Mining or Construction

COMMENTS

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☑ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☑ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run Distance from Evaluated Stream 0.50

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Mahoning Township / City: Youngstown

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 01/06/20 Quantity: 0.01

Photograph Information: 3 photos, upstream, downsteam and substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 10%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☑ Unstable ☐

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

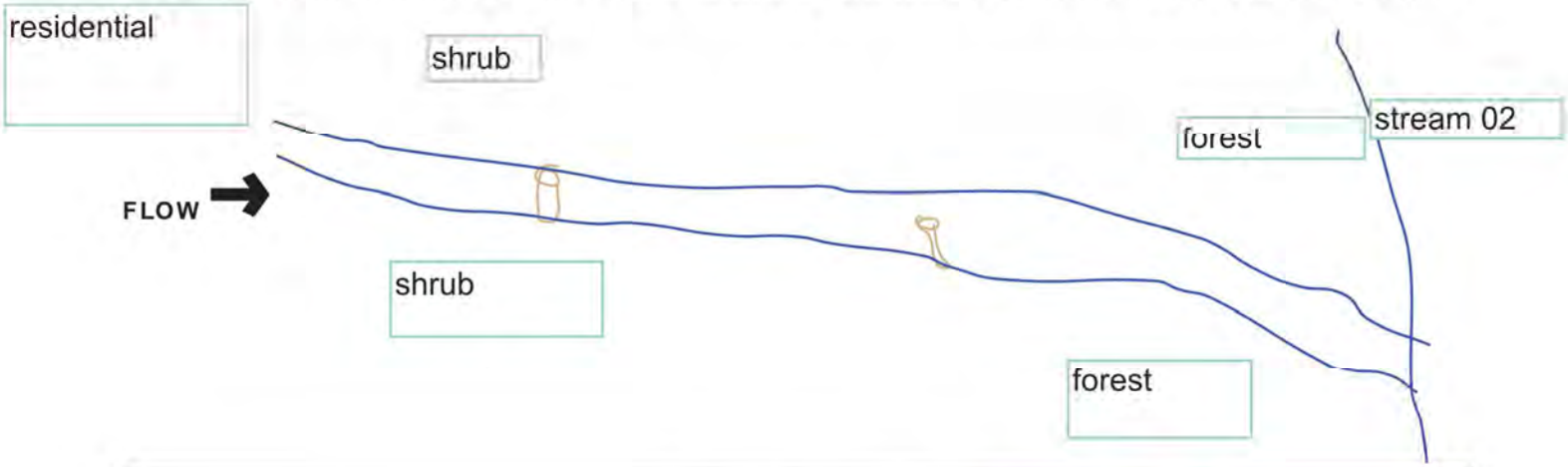
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Save as pdf Reset Form

Stream RLP-25 Class 1

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 18

SITE NAME/LOCATION: Youngstown 138kV Reinforcement Project

hh-aeh-20200107-03 SITE NUMBER: NA RIVER BASIN: Dry Run-Mahoning DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT.: 41.08953 LONG.: -80.61110 RIVER CODE: NA RIVER MILE: NA

DATE: 01/07/20 SCORER: AEH/SKM COMMENTS: Ephemeral

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]	0%	☑ ☐	SILT [3 pt]	75%
☐ ☐	BOULDER (>256 mm) [16 pts]	0%	☐ ☑	LEAF PACK/WOODY DEBRIS [3 pts]	25%
☐ ☐	BEDROCK [16 pt]	0%	☐ ☐	FINE DETRITUS [3 pts]	0%
☐ ☐	COBBLE (65-256 mm) [12 pts]	0%	☐ ☐	CLAY or HARDPAN [0 pt]	0%
☐ ☐	GRAVEL (2-64 mm) [9 pts]	0%	☐ ☐	MUCK [0 pts]	0%
☐ ☐	SAND (<2 mm) [6 pts]	0%	☐ ☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 TOTAL NUMBER OF SUBSTRATE TYPES: 2

HHEI Metric Points

Substrate Max = 40: 8

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: MAXIMUM POOL DEPTH (Inches): 0.50

Pool Depth Max = 30: 5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: AVERAGE BANKFULL WIDTH (Feet): 0.50

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L R	FLOODPLAIN QUALITY (Most Predominant per Bank) L R	L R
☐ ☐ Wide >10m	☐ ☐ Mature Forest, Wetland	☐ ☐ Conservation Tillage
☑ ☑ Moderate 5-10m	☑ ☑ Immature Forest, Shrub or Old Field	☐ ☐ Urban or Industrial
☐ ☐ Narrow <5m	☐ ☐ Residential, Park, New Field	☐ ☐ Open Pasture, Row Crop
☐ ☐ None	☐ ☐ Fenced Pasture	☐ ☐ Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run Distance from Evaluated Stream 0.50

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Mahoning Township / City: Youngstown

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 01/06/20 Quantity: 0.01

Photograph Information: 3 photos, upstream, downsteam and substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 10%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☑ Unstable ☐

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

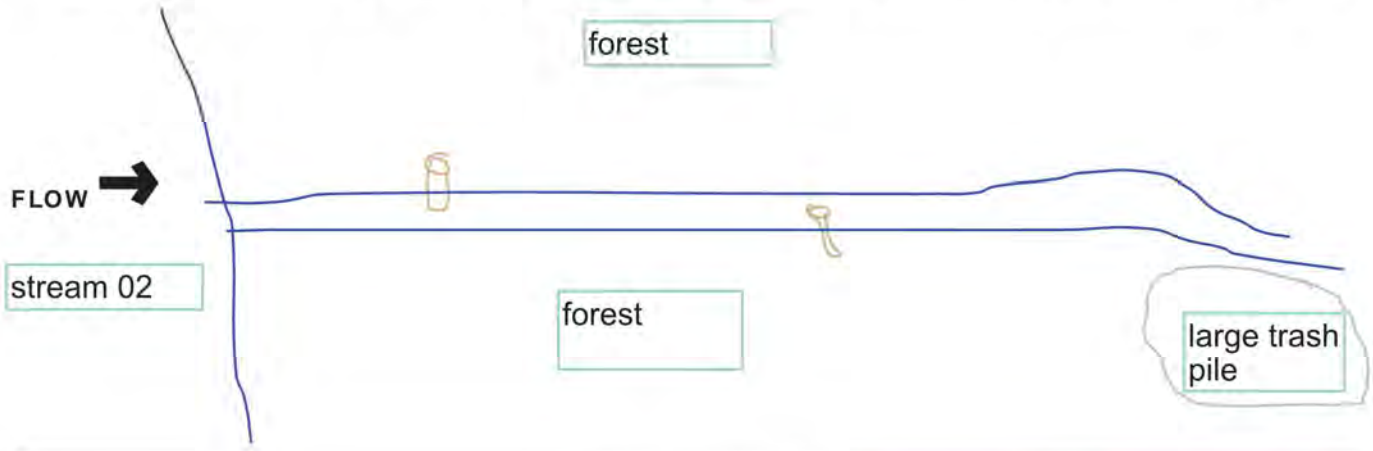
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Save as pdf Reset Form

Stream RLP- 26 Class 1

Ohio EPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 26

SITE NAME/LOCATION: Youngstown 138kV Reinforcement Project

hh-aeh-20200107-05 SITE NUMBER: NA RIVER BASIN: Dry Run-Mahoning DRAINAGE AREA (mi²): 0.25

LENGTH OF STREAM REACH (ft): 200 LAT.: 41.08246 LONG.: -80.61068 RIVER CODE: NA RIVER MILE: NA

DATE: 01/07/20 SCORER: AEH/SKM COMMENTS: intermittent

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY
culverted through abandoned parking lot

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]	0%	☐ ☑	SILT [3 pt]	30%
☐ ☐	BOULDER (>256 mm) [16 pts]	0%	☐ ☐	LEAF PACK/WOODY DEBRIS [3 pts]	20%
☐ ☐	BEDROCK [16 pt]	0%	☐ ☐	FINE DETRITUS [3 pts]	0%
☐ ☐	COBBLE (65-256 mm) [12 pts]	10%	☐ ☐	CLAY or HARDPAN [0 pt]	0%
☑ ☐	GRAVEL (2-64 mm) [9 pts]	40%	☐ ☐	MUCK [0 pts]	0%
☐ ☐	SAND (<2 mm) [6 pts]	0%	☐ ☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 10.00% (A) 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 4

HHEI Metric Points

Substrate Max = 40: 16 (A + B)

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: MAXIMUM POOL DEPTH (Inches): 1.00

Pool Depth Max = 30: 5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: AVERAGE BANKFULL WIDTH (Feet): 3.00

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L R	FLOODPLAIN QUALITY (Most Predominant per Bank) L R	L R
☐ ☐ Wide >10m	☐ ☐ Mature Forest, Wetland	☐ ☐ Conservation Tillage
☑ ☑ Moderate 5-10m	☑ ☑ Immature Forest, Shrub or Old Field	☐ ☐ Urban or Industrial
☐ ☐ Narrow <5m	☐ ☐ Residential, Park, New Field	☐ ☐ Open Pasture, Row Crop
☐ ☐ None	☐ ☐ Fenced Pasture	☐ ☐ Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☐ 0.5
- ☑ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run and Mahoning River Distance from Evaluated Stream 0.00

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Mahoning Township / City: Youngstown

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 01/06/20 Quantity: 0.01

Photograph Information: 3 photos, upstream, downsteam and substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 20%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☐ Unstable ☑

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

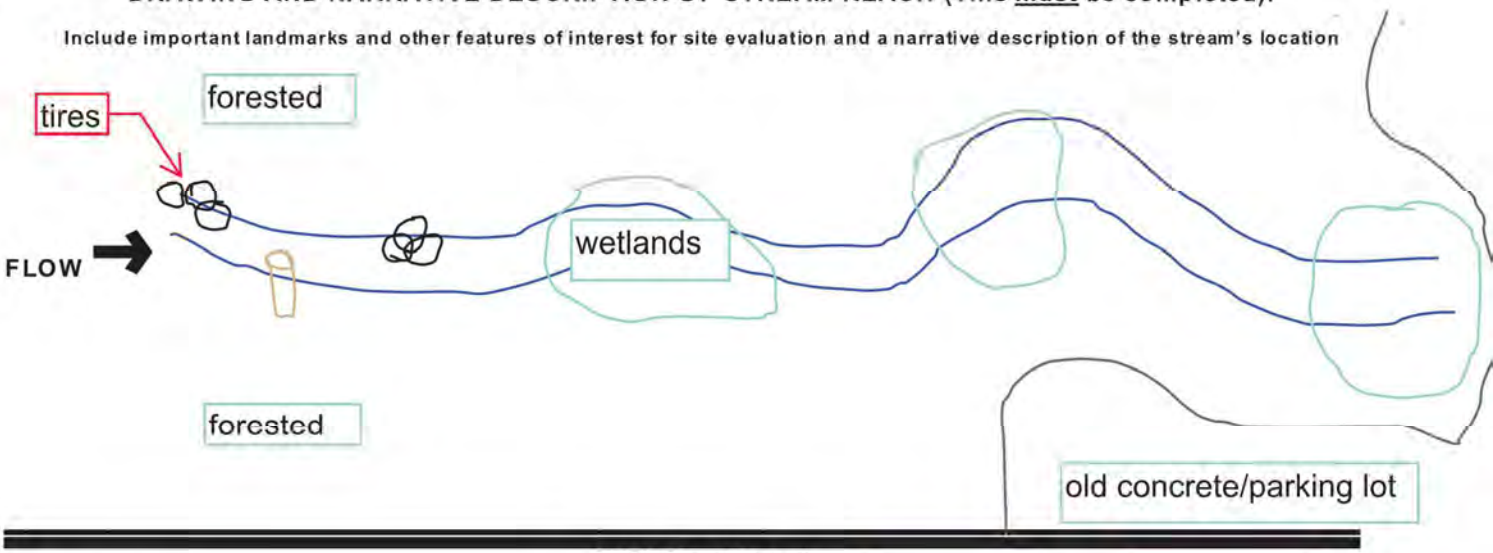
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Save as pdf Reset Form

Stream RLP-27 Class 1

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 28

SITE NAME/LOCATION: Youngstown 138kV Reinforcement Project

hh-aeh-20200107-06 SITE NUMBER: NA RIVER BASIN: Dry Run-Mahoning DRAINAGE AREA (mi²): 0.25

LENGTH OF STREAM REACH (ft): 200 LAT.: 41.08327 LONG.: -80.61038 RIVER CODE: NA RIVER MILE: NA

DATE: 01/07/20 SCORER: AEH/SKM COMMENTS: ephemeral, tributary of hh-aeh-20200107-05

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT
	BLDR SLABS [16 pts]	0%
	BOULDER (>256 mm) [16 pts]	0%
	BEDROCK [16 pt]	0%
	COBBLE (65-256 mm) [12 pts]	20%
☑	GRAVEL (2-64 mm) [9 pts]	20%
	SAND (<2 mm) [6 pts]	20%

TYPE		PERCENT
☑	SILT [3 pt]	25%
	LEAF PACK/WOODY DEBRIS [3 pts]	10%
	FINE DETRITUS [3 pts]	0%
	CLAY or HARDPAN [0 pt]	5%
	MUCK [0 pts]	0%
	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 20.00% (A) 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 6

HHEI Metric Points

Substrate Max = 40: 18

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: MAXIMUM POOL DEPTH (Inches): 0.50

Pool Depth Max = 30: 5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: AVERAGE BANKFULL WIDTH (Feet): 3.00

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run and Mahoning River Distance from Evaluated Stream 0.70

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Mahoning Township / City: Youngstown

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 01/06/20 Quantity: 0.01

Photograph Information: 3 photos, upstream, downsteam and substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 25%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☐ Unstable ☑

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

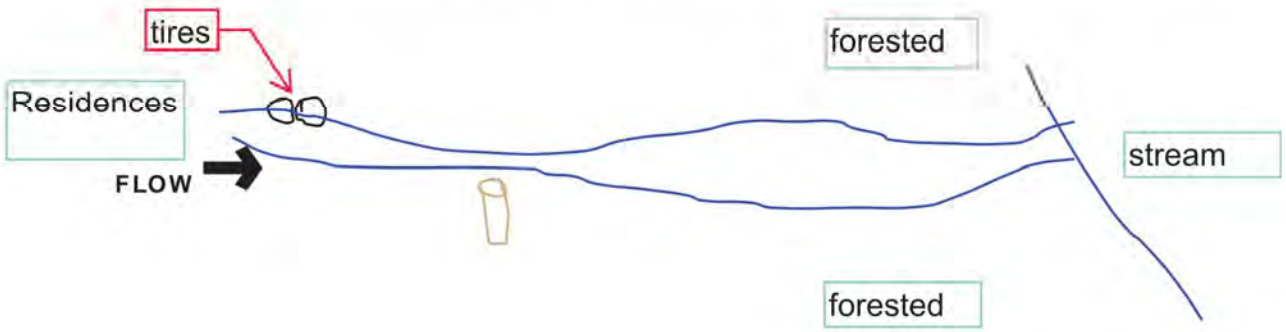
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Save as pdf Reset Form

Stream RLP-28 | Modified Class 1

Ohio EPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 26

SITE NAME/LOCATION: Youngstown 138kV Reinforcement Project

hh-aeh-20200106-02 | SITE NUMBER: NA | RIVER BASIN: Dry Run-Mahoning | DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 | LAT.: 41.09224 | LONG.: -80.64336 | RIVER CODE: NA | RIVER MILE: 18

DATE: 01/06/20 | SCORER: AEH/SKM | COMMENTS: Ephemeral

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY

recent construction west of stream, silt/dirt falling into stream

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☐	SILT [3 pt]	50%
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	5%
☐	BEDROCK [16 pt]	0%	☐	FINE DETRITUS [3 pts]	0%
☐	COBBLE (65-256 mm) [12 pts]	0%	☐	CLAY or HARDPAN [0 pt]	0%
☑	GRAVEL (2-64 mm) [9 pts]	40%	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	0%	☐	ARTIFICIAL [3 pts]	5%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00% (A) | 100% (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 | TOTAL NUMBER OF SUBSTRATE TYPES: 4

HHEI Metric Points

Substrate Max = 40: 16

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: | MAXIMUM POOL DEPTH (Inches): 0.50

Pool Depth Max = 30: 5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: | AVERAGE BANKFULL WIDTH (Feet): 2.00

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☑	Urban or Industrial
☐	☑	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☑ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Mahoning River Distance from Evaluated Stream 0.15

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Youngstown NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Mahoning Township / City: Youngstown

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 01/06/20 Quantity: 0.01

Photograph Information: 3 photos, upstream, downsteam and substrate

Elevated Turbidity? (Y/N): N Canopy (% open): 10%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☑ Unstable ☐

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

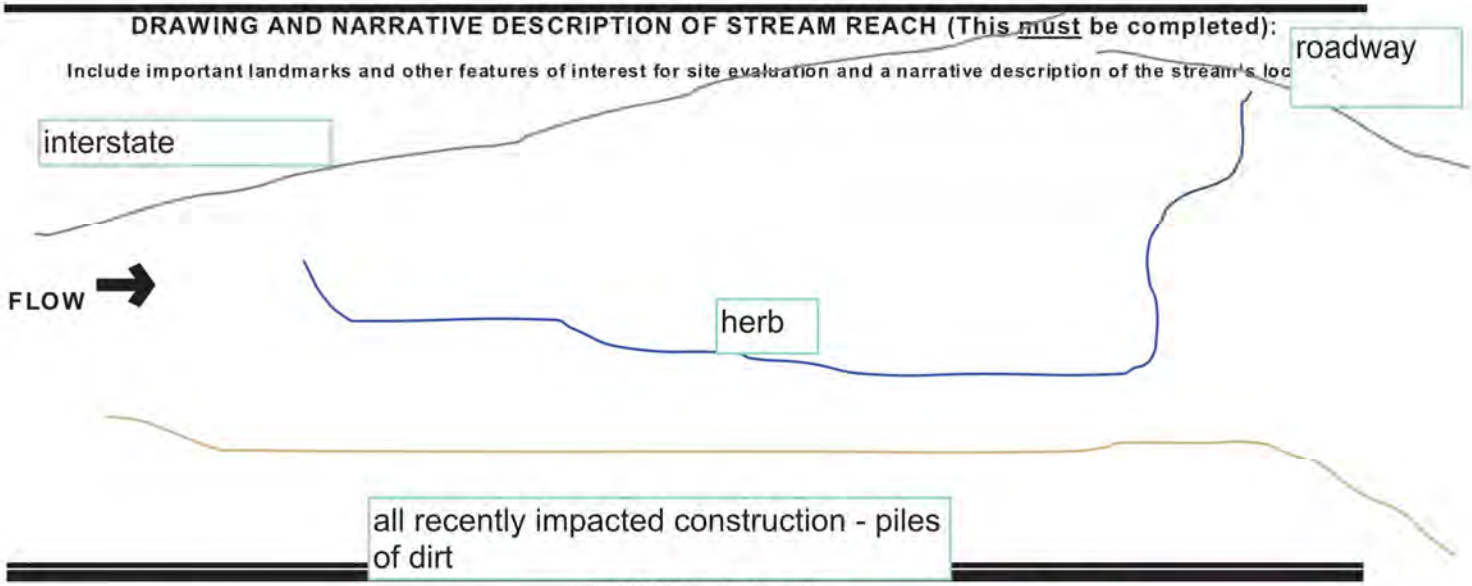
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's loc



Save as pdf Reset Form

Stream RLP-29 — Good Warmwater

OhioEPA Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 56

Stream & Location: Youngstown 138kV Reinforcement Project **RM:** _ _ _._ **Date:** 10/6/2020

QHEI-2020-10-06-BJM-001 **Scorers Full Name & Affiliation:** Brian Miller AECOM

River Code: _ _ _ - _ _ _ - _ _ _ **STORET #:** _ _ _ _ _ _ **Lat./Long.:** (NAD 83 - decimal °) 41.096492, -80.611802 **Office verified location** ☐

1] SUBSTRATE

Check **ONLY Two** substrate *TYPE BOXES*; estimate % or note every type present

Check ONE (*Or 2 & average*)

BEST TYPES	POOL	RIFFLE	OTHER TYPES	POOL	RIFFLE
☐ ☐ BLDR /SLABS [10]			☐ ☐ HARDPAN [4]		
☐ ☐ BOULDER [9]			☐ ☐ DETRITUS [3]		
☐ ☑ COBBLE [8]	30	40	☐ ☐ MUCK [2]		
☑ ☐ GRAVEL [7]	35	35	☐ ☐ SILT [2]	20	10
☐ ☐ SAND [6]			☐ ☐ ARTIFICIAL [0]		
☐ ☐ BEDROCK [5]	5	15	(Score natural substrates; ignore sludge from point-sources)		

NUMBER OF BEST TYPES: ☑ 4 or more [2] ☐ 3 or less [0]

ORIGIN
- ☑ LIMESTONE [1]
- ☑ TILLS [1]
- ☐ WETLANDS [0]
- ☐ HARDPAN [0]
- ☐ SANDSTONE [0]
- ☐ RIP/RAP [0]
- ☐ LACUSTURINE [0]
- ☐ SHALE [-1]
- ☐ COAL FINES [-2]

QUALITY

SILT
- ☐ HEAVY [-2]
- ☐ MODERATE [-1]
- ☑ NORMAL [0]
- ☐ FREE [1]

EMBEDDEDNESS
- ☐ EXTENSIVE [-2]
- ☐ MODERATE [-1]
- ☑ NORMAL [0]
- ☐ NONE [1]

Substrate 19 *Maximum 20*

Comments

2] INSTREAM COVER

Indicate presence 0 to 3: **0**-Absent; **1**-Very small amounts or if more common of marginal quality; **2**-Moderate amounts, but not of highest quality or in small amounts of highest quality; **3**-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

- 1 UNDERCUT BANKS [1]
- 1 OVERHANGING VEGETATION [1]
- 0 SHALLOWS (IN SLOW WATER) [1]
- 0 ROOTMATS [1]
- 0 POOLS > 70cm [2]
- 0 ROOTWADS [1]
- 0 BOULDERS [1]
- 1 OXBOWS, BACKWATERS [1]
- 1 AQUATIC MACROPHYTES [1]
- 1 LOGS OR WOODY DEBRIS [1]

AMOUNT (Check ONE (*Or 2 & average*))
- ☐ EXTENSIVE >75% [11]
- ☐ MODERATE 25-75% [7]
- ☐ SPARSE 5-<25% [3]
- ☑ NEARLY ABSENT <5% [1]

Cover 6 *Maximum 20*

Comments

3] CHANNEL MORPHOLOGY

Check ONE in each category (*Or 2 & average*)

SINUOSITY
- ☐ HIGH [4]
- ☑ MODERATE [3]
- ☐ LOW [2]
- ☐ NONE [1]

DEVELOPMENT
- ☐ EXCELLENT [7]
- ☑ GOOD [5]
- ☐ FAIR [3]
- ☐ POOR [1]

CHANNELIZATION
- ☐ NONE [6]
- ☐ RECOVERED [4]
- ☑ RECOVERING [3]
- ☐ RECENT OR NO RECOVERY [1]

STABILITY
- ☐ HIGH [3]
- ☑ MODERATE [2]
- ☐ LOW [1]

Channel 13 *Maximum 20*

Comments Modifications from roads

4] BANK EROSION AND RIPARIAN ZONE

Check **ONE** in each category for ***EACH BANK*** (*Or 2 per bank & average*)

River right looking downstream

EROSION

L	R	
☑	☑	NONE / LITTLE [3]
☐	☑	MODERATE [2]
☐	☐	HEAVY / SEVERE [1]

RIPARIAN WIDTH

L	R	
☐	☐	WIDE > 50m [4]
☑	☑	MODERATE 10-50m [3]
☐	☐	NARROW 5-10m [2]
☐	☐	VERY NARROW < 5m [1]
☐	☐	NONE [0]

FLOOD PLAIN QUALITY

L	R	
☑	☑	FOREST, SWAMP [3]
☐	☐	SHRUB OR OLD FIELD [2]
☑	☑	RESIDENTIAL, PARK, NEW FIELD [1]
☐	☐	FENCED PASTURE [1]
☐	☐	OPEN PASTURE, ROWCROP [0]

L	R	
☐	☐	CONSERVATION TILLAGE [1]
☐	☐	URBAN OR INDUSTRIAL [0]
☐	☐	MINING / CONSTRUCTION [0]

Indicate predominant land use(s) past 100m riparian.

Riparian 8 *Maximum 10*

Comments

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH (Check **ONE** (*ONLY!*))
- ☐ > 1m [6]
- ☐ 0.7-<1m [4]
- ☑ 0.4-<0.7m [2]
- ☐ 0.2-<0.4m [1]
- ☐ < 0.2m [0]

CHANNEL WIDTH (Check ONE (*Or 2 & average*))
- ☑ POOL WIDTH > RIFFLE WIDTH [2]
- ☐ POOL WIDTH = RIFFLE WIDTH [1]
- ☐ POOL WIDTH > RIFFLE WIDTH [0]

CURRENT VELOCITY (Check ALL that apply)
- ☐ TORRENTIAL [-1]
- ☐ VERY FAST [1]
- ☐ FAST [1]
- ☑ MODERATE [1]
- ☑ SLOW [1]
- ☐ INTERSTITIAL [-1]
- ☐ INTERMITTENT [-2]
- ☐ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)

Pool / Current 6 *Maximum 12*

Comments

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (*Or 2 & average*). ☐ NO RIFFLE [metric=0]

RIFFLE DEPTH
- ☐ BEST AREAS > 10cm [2]
- ☑ BEST AREAS 5-10cm [1]
- ☐ BEST AREAS < 5cm [metric=0]

RUN DEPTH
- ☐ MAXIMUM > 50cm [2]
- ☑ MAXIMUM < 50cm [1]

RIFFLE / RUN SUBSTRATE
- ☑ STABLE (e.g., Cobble, Boulder) [2]
- ☐ MOD. STABLE (e.g., Large Gravel) [1]
- ☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]

RIFFLE / RUN EMBEDDEDNESS
- ☐ NONE [2]
- ☐ LOW [1]
- ☑ MODERATE [0]
- ☐ EXTENSIVE [-1]

Riffle / Run 4 *Maximum 8*

Comments

6] GRADIENT

(34.4 ft/mi) ☐ VERY LOW - LOW [2-4] ☑ MODERATE [6-10] ☐ HIGH - VERY HIGH [10-6]

DRAINAGE AREA (9.4 mi²)

%POOL: 30 %GLIDE: %RUN: 10 %RIFFLE: 60

Gradient 4 *Maximum 10*

A] SAMPLED REACH

Check ALL that apply

Comment RE: Reach consistency/ Is reach typical of steam?, *Recreation/* Observed - Inferred, *Other/* Sampling observations, Concerns, Access directions, etc.

METHOD

- ☐ BOAT
- ☐ WADE
- ☐ L. LINE
- ☑ OTHER

STAGE

1st -sample pass- 2nd	
☐ HIGH	☐
☐ UP	☐
☑ NORMAL	☐
☐ LOW	☐
☐ DRY	☐

DISTANCE

- ☐ 0.5 Km
- ☐ 0.2 Km
- ☐ 0.15 Km
- ☐ 0.12 Km
- ☑ OTHER

200 feet

CLARITY

1st -sample pass- 2nd	
☑ < 20 cm	☐
☐ 20-<40 cm	☐
☐ 40-70 cm	☐
☐ > 70 cm/ CTB	☐
☐ SECCHI DEPTH	☐

CANOPY

- ☐ > 85%- OPEN
- ☐ 55%-<85%
- ☑ 30%-<55%
- ☐ 10%-<30%
- ☐ <10%- CLOSED

1st pass 2nd _____ cm

The stream has algae cover nearly most of the cobble and boulders and several areas had garbage and/foam draining into the stream. Caddis fly, minnow darter, and cray fish were observed in the stream.

B] AESTHETIC

- ☑ NUISANCE ALGAE
- ☐ INVASIVE MACROPHYTES
- ☐ EXCESS TURBIDITY
- ☐ DISCOLORATION
- ☑ FOAM / SCUM
- ☐ OIL SHEEN
- ☑ TRASH / LITTER
- ☐ NUISANCE ODOR
- ☐ SLUDGE DEPOSITS
- ☐ CSOs/SSOs/OUTFALLS

C] REC

ION AREA DEPTH

POOL: ☐ >100ft² ☐ >3ft

D] MAINTENANCE

Circle some & *COMMENT*

PUBLIC / PRIVATE / BOTH / NA
ACTIVE / HISTORIC / BOTH / NA
YOUNG-SUCCESSION-OLD
SPRAY / SNAG / REMOVED
MODIFIED / DIPPED OUT / NA
LEVEED / ONE SIDED
RELOCATED / CUTOFFS
MOVING-BEDLOAD-STABLE
ARMOURED / SLUMPS
ISLANDS / SCOURED
IMPOUNDED / DESICCATED
FLOOD CONTROL / DRAINAGE

E] ISSUES

WWTP / CSO / NPDES / INDUSTRY
HARDENED / URBAN / DIRT&GRIME
CONTAMINATED / LANDFILL
BMPs-CONSTRUCTION-SEDIMENT
LOGGING / IRRIGATION / COOLING
BANK / EROSION / SURFACE
FALSE BANK / MANURE / LAGOON
WASH H_20 / TILE / H_20 TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY

F] MEASUREMENTS

x̄ width	30 feet
x̄ depth	18 inch
max. depth	20 inch
x̄ bankfull width	30 feet
bankfull x̄ depth	18 inch
W/D ratio	20
bankfull max. depth	Not Cal.
floodprone x^2 width	Not Cal.
entrench. ratio	Not Cal.

Le *Tree:*

Stream Drawing:



Stream RLP-30 Mod. Class 1

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 14

SITE NAME/LOCATION Youngstown 138kV Reinforcement Project

SITE NUMBER N/A RIVER BASIN Dry Run - Mahoni DRAINAGE AREA (mi²) 0.01

LENGTH OF STREAM REACH (ft) 162 LAT. 41.09417 LONG. -80.61400 RIVER CODE N/A RIVER MILE N/A

DATE 10/06/20 SCORER BJM COMMENTS HHEI-2020-10-06-BJM-001 EPHEMERAL

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY

Fill from residential dumping

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]	0	☑☐	SILT [3 pt]	35
☐☐	BOULDER (>256 mm) [16 pts]	0	☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	10
☐☐	BEDROCK [16 pt]	0	☐☐	FINE DETRITUS [3 pts]	10
☐☐	COBBLE (65-256 mm) [12 pts]	10	☐☑	CLAY or HARDPAN [0 pt]	25
☐☐	GRAVEL (2-64 mm) [9 pts]	10	☐☐	MUCK [0 pts]	0
☐☐	SAND (<2 mm) [6 pts]	0	☐☐	ARTIFICIAL [3 pts]	0

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 10 (A) Substrate Percentage Check (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3 **TOTAL NUMBER OF SUBSTRATE TYPES:** 6

HHEI Metric Points

Substrate Max = 40

9

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS Owhm at 2inches - no flowing water **MAXIMUM POOL DEPTH** (Inches): 0.00

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS Average bank at 3ft **AVERAGE BANKFULL WIDTH** (Feet): 3.00

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐	Stream Flowing	☐	Moist Channel, isolated pools, no flow (Intermittent)
☐	Subsurface flow with isolated pools (Interstitial)	☑	Dry channel, no water (Ephemeral)

COMMENTS

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐	None	☐	1.0	☐	2.0	☐	3.0
☑	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☑ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run Distance from Evaluated Stream 0.01

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Mahoning Township / City: T2N R1W

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/06/20 Quantity: 0.59

Photograph Information: See Appendix D

Elevated Turbidity? (Y/N): N Canopy (% open): 30

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

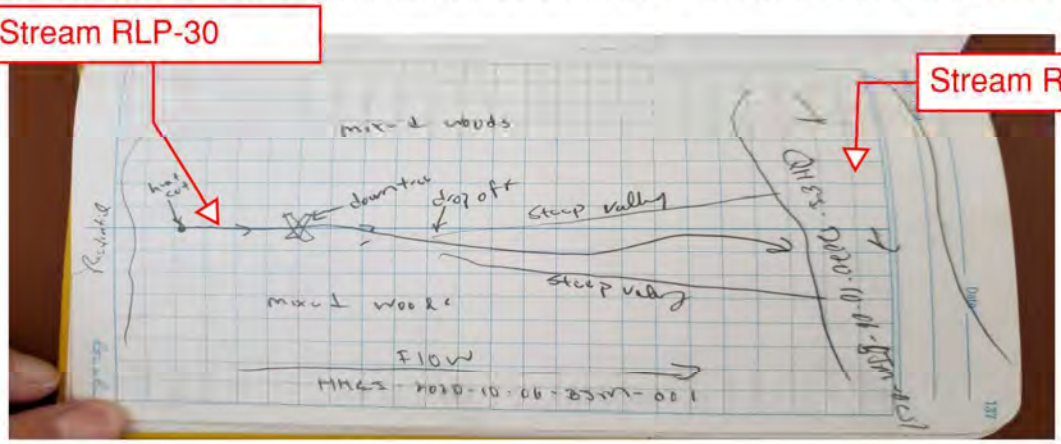
Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: None observed

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW ➔



Save as pdf Reset Form

Stream RLP-31 Mod. Class 1

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 12

SITE NAME/LOCATION Youngstown 138kV Reinforcement Project

SITE NUMBER N/A RIVER BASIN Dry Run - Mahoni DRAINAGE AREA (mi²)

LENGTH OF STREAM REACH (ft) 80 LAT. 41.09639 LONG. -80.61123 RIVER CODE N/A RIVER MILE N/A

DATE 10/06/20 SCORER BJM COMMENTS HHEI-2020-10-06-BJM-002 EPHEMERAL

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY

Fed from roadside drainage stormwater

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]	0	☑☐	SILT [3 pt]	40
☐☐	BOULDER (>256 mm) [16 pts]	0	☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	20
☐☐	BEDROCK [16 pt]	0	☐☐	FINE DETRITUS [3 pts]	10
☐☐	COBBLE (65-256 mm) [12 pts]	0	☐☑	CLAY or HARDPAN [0 pt]	30
☐☐	GRAVEL (2-64 mm) [9 pts]	0	☐☐	MUCK [0 pts]	0
☐☐	SAND (<2 mm) [6 pts]	0	☐☐	ARTIFICIAL [3 pts]	0

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 0 (A) Substrate Percentage Check (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

HHEI Metric Points

Substrate Max = 40

7

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS Owhm depth 1inch - no flowing water **MAXIMUM POOL DEPTH** (Inches): 0.00

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS 3ft bank width **AVERAGE BANKFULL WIDTH** (Feet): 3.00

Bankfull Width Max=30

5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH L	R (Per Bank)	FLOODPLAIN QUALITY L	R (Most Predominant per Bank)	L	R	
☐	☐ Wide >10m	☐	☐ Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐ Moderate 5-10m	☑	☑ Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☑	☑ Narrow <5m	☐	☐ Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐ None	☐	☐ Fenced Pasture	☐	☐	Mining or Construction

COMMENTS

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☑ Dry channel, no water (Ephemeral)

COMMENTS

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐	None	☐	1.0	☐	2.0	☐	3.0
☑	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☑ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run Distance from Evaluated Stream 0.01

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Mahoning Township / City: T2N R1W

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/06/20 Quantity: 0.59

Photograph Information: See Appendix D.

Elevated Turbidity? (Y/N): N Canopy (% open): 30

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

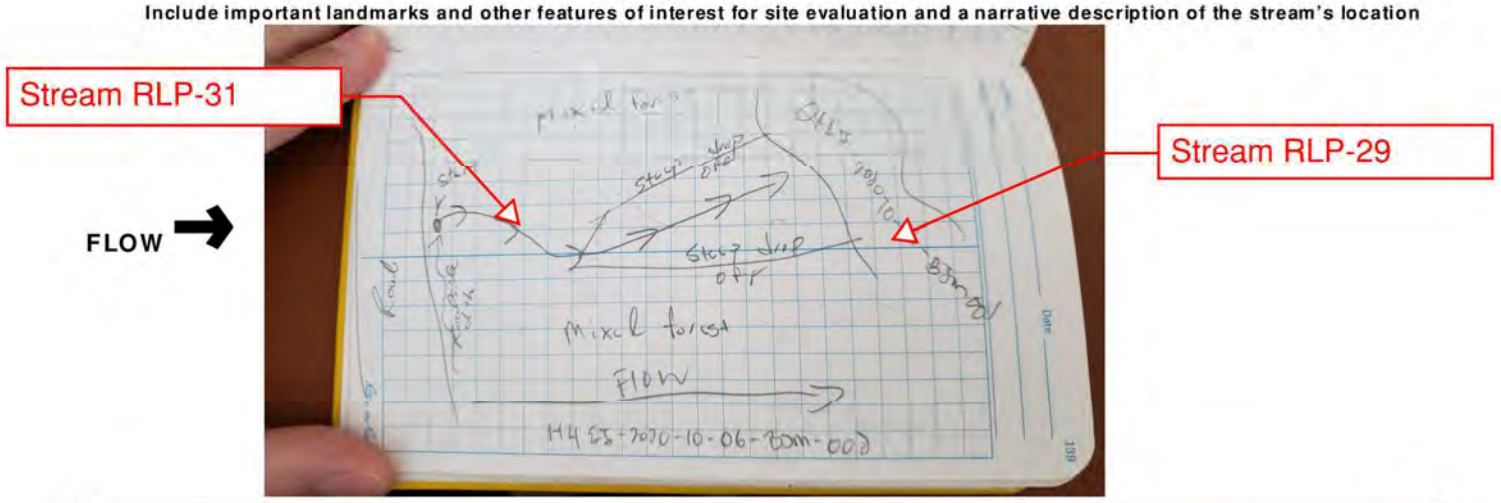
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: None Observed

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Save as pdf Reset Form

Stream RLP-32 Mod. Class 1

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 15

SITE NAME/LOCATION: Youngstown 138kV Reinforcement Project

SITE NUMBER: N/A RIVER BASIN: Dry Run - Mahoni DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 95 LAT.: 41.09727 LONG.: -80.60970 RIVER CODE: N/A RIVER MILE: N/A

DATE: 10/06/20 SCORER: BJM COMMENTS: HHEI-2020-10-06-BJM-003 EPHEMERAL

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY

Fed from roadside drainage/ stormwater

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]	0	☑☐	SILT [3 pt]	40
☐☐	BOULDER (>256 mm) [16 pts]	0	☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	20
☐☐	BEDROCK [16 pt]	0	☐☐	FINE DETRITUS [3 pts]	0
☐☐	COBBLE (65-256 mm) [12 pts]	0	☐☐	CLAY or HARDPAN [0 pt]	10
☐☐	GRAVEL (2-64 mm) [9 pts]	0	☐☐	MUCK [0 pts]	0
☐☐	SAND (<2 mm) [6 pts]	0	☐☑	ARTIFICIAL [3 pts]	30

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0 (A) Substrate Percentage Check (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

HHEI Metric Points

Substrate Max = 40: 10

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ > 5 cm - 10 cm [15 pts]
☐ < 5 cm [5 pts]
☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: Owhm depth 1inch no flowing water **MAXIMUM POOL DEPTH** (Inches): 0.00

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐ > 4.0 meters (> 13') [30 pts]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: 3ft bank width **AVERAGE BANKFULL WIDTH** (Feet): 3.00

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L R	FLOODPLAIN QUALITY (Most Predominant per Bank) L R	L R
☐☐ Wide >10m	☐☐ Mature Forest, Wetland	☐☐ Conservation Tillage
☑☑ Moderate 5-10m	☑☑ Immature Forest, Shrub or Old Field	☐☐ Urban or Industrial
☐☐ Narrow <5m	☐☐ Residential, Park, New Field	☐☐ Open Pasture, Row Crop
☐☐ None	☐☐ Fenced Pasture	☐☐ Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☑ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None ☐ 1.0 ☐ 2.0 ☐ 3.0
☑ 0.5 ☐ 1.5 ☐ 2.5 ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☑ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run Distance from Evaluated Stream 0.01

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Mahoning Township / City: T2N R1W

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/06/20 Quantity: 0.56

Photograph Information: See Appendix D

Elevated Turbidity? (Y/N): N Canopy (% open): 20

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

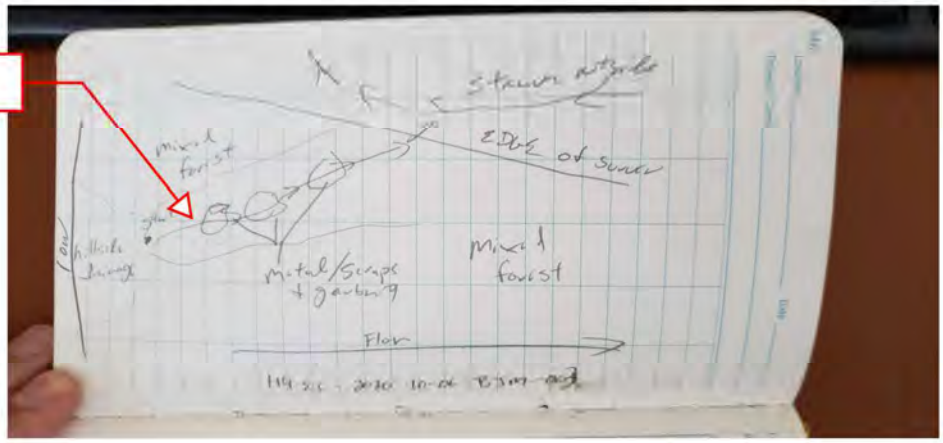
Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

Stream RLP-32

FLOW ➔



Save as pdf Reset Form

Stream RLP-33 Mod. Class 1

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 14

SITE NAME/LOCATION: Youngstown 138kV Reinforcement Project

SITE NUMBER: N/A RIVER BASIN: Dry Run - Mahoni DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 67 LAT.: 41.09741 LONG.: -80.60937 RIVER CODE: N/A RIVER MILE: N/A

DATE: 10/06/20 SCORER: BJM COMMENTS: HHEI-2020-10-06-BJM-004 EPHEMERAL

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY

Fed from roadside drainage / stormwater

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]	0	☐☑	SILT [3 pt]	40
☐☐	BOULDER (>256 mm) [16 pts]	0	☑☐	LEAF PACK/WOODY DEBRIS [3 pts]	50
☐☐	BEDROCK [16 pt]	0	☐☐	FINE DETRITUS [3 pts]	0
☐☐	COBBLE (65-256 mm) [12 pts]	0	☐☐	CLAY or HARDPAN [0 pt]	10
☐☐	GRAVEL (2-64 mm) [9 pts]	0	☐☐	MUCK [0 pts]	0
☐☐	SAND (<2 mm) [6 pts]	0	☐☐	ARTIFICIAL [3 pts]	0

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0 (A) Substrate Percentage Check (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 3

HHEI Metric Points

Substrate Max = 40: 9

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: Owhm depth 1inch no flowing water observed **MAXIMUM POOL DEPTH** (Inches): 0.00

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: 3ft bank width **AVERAGE BANKFULL WIDTH** (Feet): 3.00

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L R	FLOODPLAIN QUALITY (Most Predominant per Bank) L R	L R
☐☐ Wide >10m	☐☐ Mature Forest, Wetland	☐☐ Conservation Tillage
☑☑ Moderate 5-10m	☑☑ Immature Forest, Shrub or Old Field	☐☐ Urban or Industrial
☐☐ Narrow <5m	☐☐ Residential, Park, New Field	☐☐ Open Pasture, Row Crop
☐☐ None	☐☐ Fenced Pasture	☐☐ Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☑ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None ☐ 1.0 ☐ 2.0 ☐ 3.0
☑ 0.5 ☐ 1.5 ☐ 2.5 ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☑ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run Distance from Evaluated Stream 0.01

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Mahoning Township / City: T2N R1W

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/06/20 Quantity: 0.56

Photograph Information: See Appendix D

Elevated Turbidity? (Y/N): N Canopy (% open): 30

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

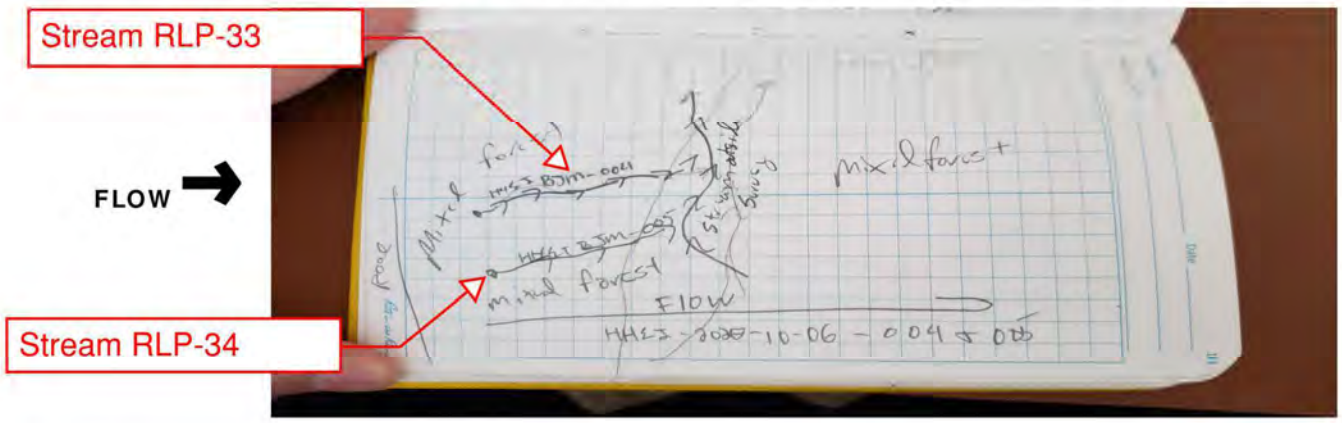
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Save as pdf Reset Form

Stream RLP-34 Mod. Class 1

Ohio EPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 15

SITE NAME/LOCATION: Youngstown 138kV Reinforcement Project

SITE NUMBER: N/A RIVER BASIN: Dry Run - Mahoni DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 33 LAT.: 41.09746 LONG.: -80.60914 RIVER CODE: N/A RIVER MILE: N/A

DATE: 10/06/20 SCORER: BJM COMMENTS: HHEI-2020-10-06-BJM-005 EPHEMERAL

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY

Fed from roadside drainage / stormwater

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]	0	☐☑	SILT [3 pt]	40
☐☐	BOULDER (>256 mm) [16 pts]	0	☑☐	LEAF PACK/WOODY DEBRIS [3 pts]	45
☐☐	BEDROCK [16 pt]	0	☐☐	FINE DETRITUS [3 pts]	0
☐☐	COBBLE (65-256 mm) [12 pts]	0	☐☐	CLAY or HARDPAN [0 pt]	10
☐☐	GRAVEL (2-64 mm) [9 pts]	0	☐☐	MUCK [0 pts]	0
☐☐	SAND (<2 mm) [6 pts]	0	☐☐	ARTIFICIAL [3 pts]	5

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0 (A)

Substrate Percentage Check (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 **TOTAL NUMBER OF SUBSTRATE TYPES:** 4

HHEI Metric Points

Substrate Max = 40: 10

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: Owhm depth 1inch No water observed **MAXIMUM POOL DEPTH** (Inches): 0.00

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) **(Check *ONLY* one box):**

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (<=3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		

COMMENTS: 3ft bank width **AVERAGE BANKFULL WIDTH** (Feet): 3.00

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐	Stream Flowing	☐	Moist Channel, isolated pools, no flow (Intermittent)
☐	Subsurface flow with isolated pools (Interstitial)	☑	Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐	None	☐	1.0	☐	2.0	☐	3.0
☑	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☑ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run Distance from Evaluated Stream 0.01

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Mahoning Township / City: T2N R1W

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/06/20 Quantity: 0.56

Photograph Information: See Appendix D

Elevated Turbidity? (Y/N): N Canopy (% open): _____

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

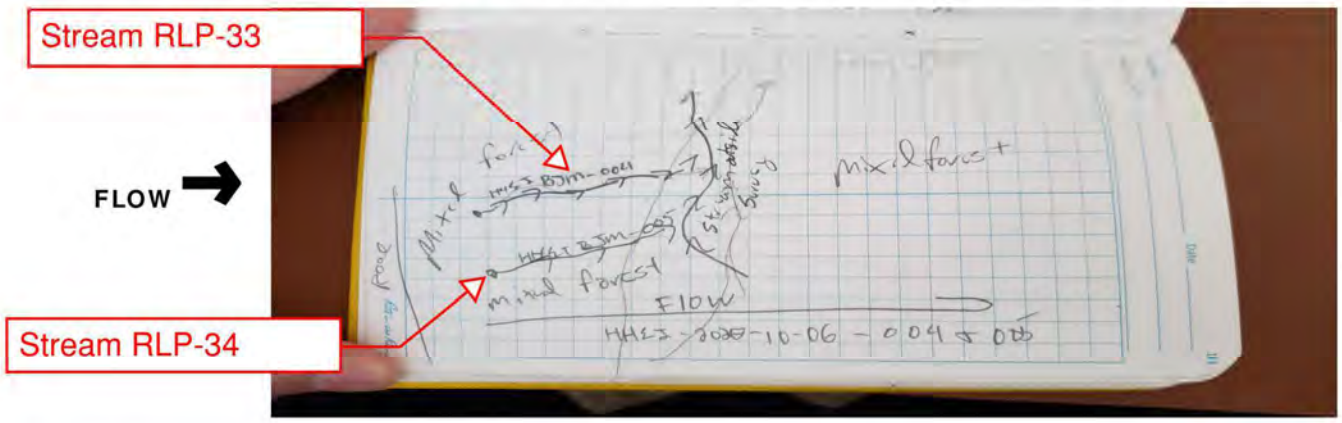
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Save as pdf Reset Form

Stream RLP-35 Mod. Class 1

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 17

SITE NAME/LOCATION: Youngstown 138kV Reinforcement Project

SITE NUMBER: N/A RIVER BASIN: Dry Run - Mahoni DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 69 LAT.: 41.09670 LONG.: -80.61056 RIVER CODE: N/A RIVER MILE: N/A

DATE: 10/06/20 SCORER: BJM COMMENTS: HHEI-2020-10-06-BJM-006 EPHEMERAL

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY

Fed from roadside drainage / stormwater

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]	0	☐☑	SILT [3 pt]	35
☐☐	BOULDER (>256 mm) [16 pts]	0	☑☐	LEAF PACK/WOODY DEBRIS [3 pts]	40
☐☐	BEDROCK [16 pt]	0	☐☐	FINE DETRITUS [3 pts]	0
☐☐	COBBLE (65-256 mm) [12 pts]	5	☐☐	CLAY or HARDPAN [0 pt]	10
☐☐	GRAVEL (2-64 mm) [9 pts]	5	☐☐	MUCK [0 pts]	0
☐☐	SAND (<2 mm) [6 pts]	0	☐☐	ARTIFICIAL [3 pts]	5

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 5 (A) Substrate Percentage Check (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 TOTAL NUMBER OF SUBSTRATE TYPES: 6

HHEI Metric Points

Substrate Max = 40: 12

A + B

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☑ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: Owhm depth 1inch no flowing water observed MAXIMUM POOL DEPTH (Inches): 0.00

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (<=3' 3") [5 pts]

COMMENTS: 3ft bank width AVERAGE BANKFULL WIDTH (Feet): 3.00

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS:

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS:

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☑ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Dry Run Distance from Evaluated Stream 0.01

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Campbell NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Mahoning Township / City: T2N R1W

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/06/20 Quantity: 0.56

Photograph Information: See Appendix D

Elevated Turbidity? (Y/N): N Canopy (% open): 20

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

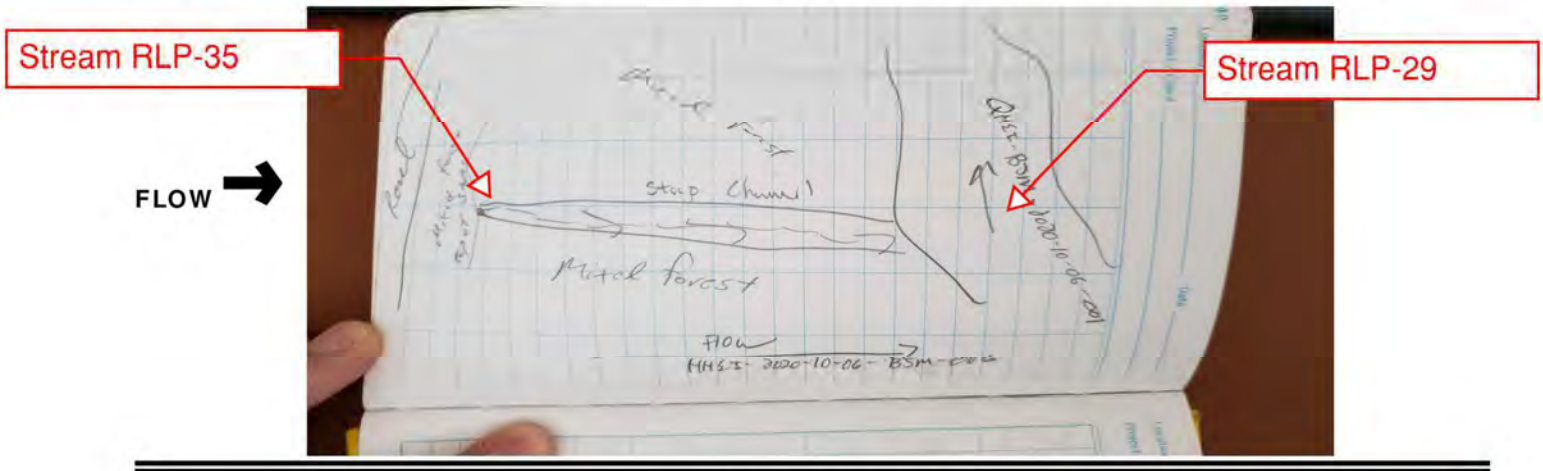
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Save as pdf Reset Form

APPENDIX D

REPRESENTATIVE WETLANDS AND STREAMS PHOTOGRAPHS

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 8, 2020

Description:

Wetland RLP-01

PEM wetland

Category 1



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 6, 2020

Description:

Wetland RLP-02

PFO wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Wetland RLP-03

PSS wetland

Category 1



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Wetland RLP-04

PEM wetland

Category 1



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Wetland RLP-05

PEM wetland

Category 1



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Wetland RLP-06

PSS wetland

Category 1



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Wetland RLP-07

PSS wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Wetland RLP-08a

PEM wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Wetland RLP-08b

PFO wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 8, 2020

Description:

Wetland RLP-09a

PSS wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 8, 2020

Description:

Wetland RLP-09b

PEM wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 8, 2020

Description:

Wetland RLP-10

PSS wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Wetland RLP-11

PEM wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Wetland RLP-12

PEM wetland

Category 1



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 6, 2020

Description:

Wetland RLP-13

PSS wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Wetland RLP-14

PFO wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Wetland RLP-15a

PEM wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Wetland RLP-15b

PSS wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 6, 2020

Description:

Wetland RLP-16a

PFO wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 6, 2020

Description:

Wetland RLP-16b

PSS wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 6, 2020

Description:

Wetland RLP-16c

PSS wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Wetland RLP-17a

PEM wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Wetland RLP-17b

PSS wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Wetland RLP-17c

PFO wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Wetland RLP-18a

PFO wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Wetland RLP-18b

PEM wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Wetland RLP-19a

PSS wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Wetland RLP-19b

PFO wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Wetland RLP-20

PFO wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Wetland RLP-21a

PEM wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Wetland RLP-21b

PFO wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Wetland RLP-22

PEM wetland

Category 1



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Wetland RLP-23

PEM wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Wetland RLP-24

PEM wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Wetland RLP-25

PEM wetland

Category 1



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Wetland RLP-26

PEM wetland

Category 1



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Wetland RLP-27

PEM wetland

Category 1



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

August 20, 2020

Description:

Wetland RLP-28

PFO wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

October 6, 2020

Description:

Wetland RLP-29a

PSS wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

October 6, 2020

Description:

Wetland RLP-29b

PEM wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

October 6, 2020

Description:

Wetland RLP-30

PEM wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

October 6, 2020

Description:

Wetland RLP-31

PEM wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

October 6, 2020

Description:

Wetland RLP-32

PFO wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

June 17, 2024

Description:

Wetland RLP-33

PEM wetland

Category 1



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
WETLANDS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

December 12, 2024

Description:

Wetland RLP-34

PEM wetland

Category 1



Facing North



Facing East



Facing South



Facing West



Soil Pit

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 6, 2020

Description:

Stream RLP-01

Perennial

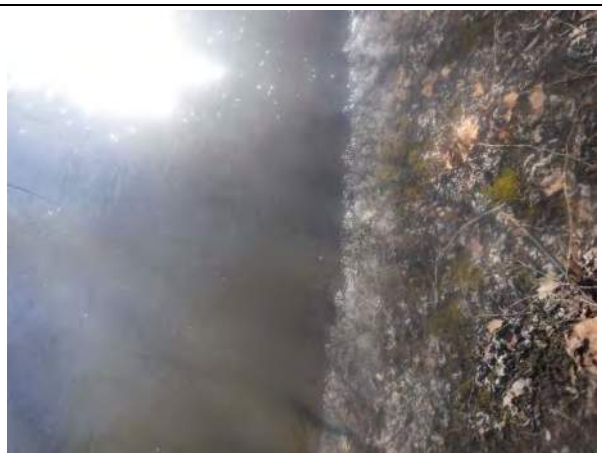
Warmwater Habitat



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 8, 2020

Description:

Stream RLP-02

Perennial

Warmwater Habitat



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 8, 2020

Description:

Stream RLP-03

Ephemeral

Modified Class 1



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 8, 2020

Description:

Stream RLP-04

Perennial

Coldwater Habitat



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 8, 2020

Description:

Stream RLP-05

Intermittent

Modified Class 2



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 8, 2020

Description:

Stream RLP-06

Ephemeral

Modified Class 1



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 8, 2020

Description:

Stream RLP-07

Ephemeral

Class 1



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 8, 2020

Description:

Stream RLP-08

Ephemeral

Class 1



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 8, 2020

Description:

Stream RLP-09

Ephemeral

Modified
Class 1



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 6, 2020

Description:

Stream RLP-10

Intermittent

Modified Class 2



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 6, 2020

Description:

Stream RLP-11

Ephemeral

Modified Class 1



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 6, 2020

Description:

Stream RLP-12

Ephemeral

Modified Class 1



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 6, 2020

Description:

Stream RLP-13

Perennial

Modified Class 2



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 6, 2020

Description:

Stream RLP-14

Intermittent

Modified Class 2



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Stream RLP-15

Intermittent

Modified Class 2



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Stream RLP-16

Intermittent

Modified Class 1



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 8, 2020

Description:

Stream RLP-17

Intermittent

Modified Class 2



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Stream RLP-18

Intermittent

Modified Class 1



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Stream RLP-19

Ephemeral

Modified Class 1



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Stream RLP-20

Perennial

Modified Class 2



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Stream RLP-21

Intermittent

Modified Class 1



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Stream RLP-22

Ephemeral

Modified Class 1



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Stream RLP-23

Intermittent

Class 1



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Stream RLP-24

Ephemeral

Class 1



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Stream RLP-25

Ephemeral

Class 1



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Stream RLP-26

Intermittent

Modified Class 1



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 7, 2020

Description:

Stream RLP-27

Ephemeral

Class 1



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

January 6, 2020

Description:

Stream RLP-28

Intermittent

Modified Class 1



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

October 6, 2020

Description:

Stream RLP-29

Perennial

Good
Warmwater



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

October 6, 2020

Description:

Stream RLP-30

Ephemeral

Modified Class 1



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

October 6, 2020

Description:

Stream RLP-31

Ephemeral

Modified Class 1



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

October 6, 2020

Description:

Stream RLP-32

Ephemeral

Modified Class 1



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

October 6, 2020

Description:

Stream RLP-33

Ephemeral

Modified Class 1



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

October 6, 2020

Description:

Stream RLP-34

Ephemeral

Modified Class 1



Facing Upstream



Facing Downstream



Substrate

AECOM

PHOTOGRAPHIC RECORD
STREAMS

Client Name:	Site Location:	Project No.
American Transmission Systems, Incorporated	Youngstown 138kV Reinforcement Project	60595883

Date:

October 6, 2020

Description:

Stream RLP-35

Ephemeral

Modified Class 1



Facing Upstream



Facing Downstream



Substrate

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / FAX (614) 416-8994

February 28, 2025

Project Code: 2025-0046656

Dear Mr. Bielfelt:

The U.S. Fish and Wildlife Service (Service) has received your recent correspondence requesting information about the subject proposal. We offer the following comments and recommendations to assist you in minimizing and avoiding adverse impacts to threatened, endangered, and proposed species pursuant to the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq), as amended (ESA).

Federally Threatened and Endangered Species: The endangered Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*) occur throughout the State of Ohio. The Indiana bat and northern long-eared bat may be found wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and breed that may also include adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, woodlots, fallow fields, and pastures. Roost trees for both species include live and standing dead trees ≥3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities. These roost trees may be located in forested habitats as well as linear features such as fencerows, riparian forests, and other wooded corridors. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves, rock crevices and abandoned mines.

Federally Proposed Species: On September 14, 2022, the Service proposed to list the tricolored bat (*Perimyotis subflavus*) as endangered under the ESA. The bat faces extinction due to the impacts of white-nose syndrome, a deadly disease affecting cave-dwelling bats across the continent. During spring, summer, and fall, this species roosts primarily among leaf clusters of live or recently dead trees, emerging at dusk to hunt for insects over waterways and forest edges. While white-nose syndrome is by far the most serious threat to the tricolored bat, other threats now have an increased significance due to the dramatic decline in the species' population. These threats include disturbance to bats in roosting, foraging, commuting, and over-wintering habitats. Mortality due to collision with wind turbines, especially during migration, has also been documented across their range. Conservation measures for the Indiana bat and northern long-eared bat will also help to conserve the tricolored bat.

Seasonal Tree Clearing for Federally Listed Bat Species: Should the proposed project site contain trees ≥3 inches dbh, we recommend avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, we recommend removal of any trees ≥3 inches dbh only occur between October 1 and March 31. Seasonal clearing is recommended to avoid adverse effects to Indiana bats and northern long-eared bats.

If implementation of this seasonal tree cutting recommendation is not possible, a summer presence/absence survey may be conducted for Indiana bats and northern long-eared bats. If Indiana bats and northern long-eared bats are not detected during the survey, then tree clearing may occur at any time of the year. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Ohio Field Office. Surveyors must have a valid federal permit. Please note that in Ohio summer mist net surveys may only be conducted between June 1 and August 15.

Section 7 Coordination: If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), then no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. We recommend the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence. This letter provides technical assistance only and does not serve as a completed section 7 consultation document.

Stream and Wetland Avoidance: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus is it important to conserve the functions and values of the remaining wetlands in Ohio (https://epa.ohio.gov/portals/47/facts/ohio_wetlands.pdf). We recommend avoiding and minimizing project impacts to all wetland habitats (e.g., forests, streams, vernal pools) to the maximum extent possible in order to benefit water quality and fish and wildlife habitat. Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the U.S. Army Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. Disturbed areas should be mulched and revegetated with native plant species. In addition, prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, or proposed species, or proposed or designated critical habitat. Should the project design change, or additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, coordination with the Service should be initiated to assess any potential impacts.

Thank you for your efforts to conserve listed species and sensitive habitats in Ohio. We recommend coordinating with the Ohio Department of Natural Resources due to the potential for the proposed project to affect state listed species and/or state lands. Contact Mike Pettegrew, Environmental Services Administrator, at (614) 265-6387 or at mike.pettegrew@dnr.ohio.gov.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov.

Sincerely,

Erin Knoll
Field Office Supervisor

cc: Matthew.Stooksbury@dnr.ohio.gov
Eileen.Wyza@dnr.ohio.gov

AECOM
525 Vine Street, Suite 1900
Cincinnati, Ohio 45202

July 21, 2025

Ohio Department of Natural Resources
Environmental Review Services
2015 Morse Road
Columbus, Ohio 43229

Re: 25-0279 Youngstown 138kV Reinforcement
American Transmission Systems, Inc., a FirstEnergy Company
Williams County, Ohio

Dear Mike Pettegrew and Eileen Wyza,

AECOM Technical Services, Inc. (AECOM), on behalf of American Transmission Systems, Inc. (ATSI), is seeking your concurrence and review of additional information regarding the Youngstown 138kV Reinforcement Project (Project) and its potential to impact species addressed in the Ohio Department of Natural Resources (ODNR) response #25-0279 received on March 5, 2025. A summary of the responses to the species within the range of the Project are provided below within **Table 1** and **Figure 1** provides results of desktop analysis for potential bat hibernacula within the Project area.

Based on the desktop assessment and the lack of habitat within the Project area, the Project is unlikely to result in adverse impacts to bat species, native mussels, the western banded killifish, or the eastern massasauga. ATSI intends to adhere to normal seasonal tree clearing restrictions (October 1 to March 31) due to the absence of mine portal openings within 0.25 miles of the Project area. Additionally, subsurface disturbance to bedrock materials is minimal or not anticipated for most of the Project. If disturbance is necessary, ATSI will avoid installing structures between November 15 and March 31. Therefore, ATSI would appreciate receiving your concurrence on the additional information provided within this request.

If you need have any questions please feel free to contact brian.miller1@aecom.com or (412)-667-9172.

Sincerely,

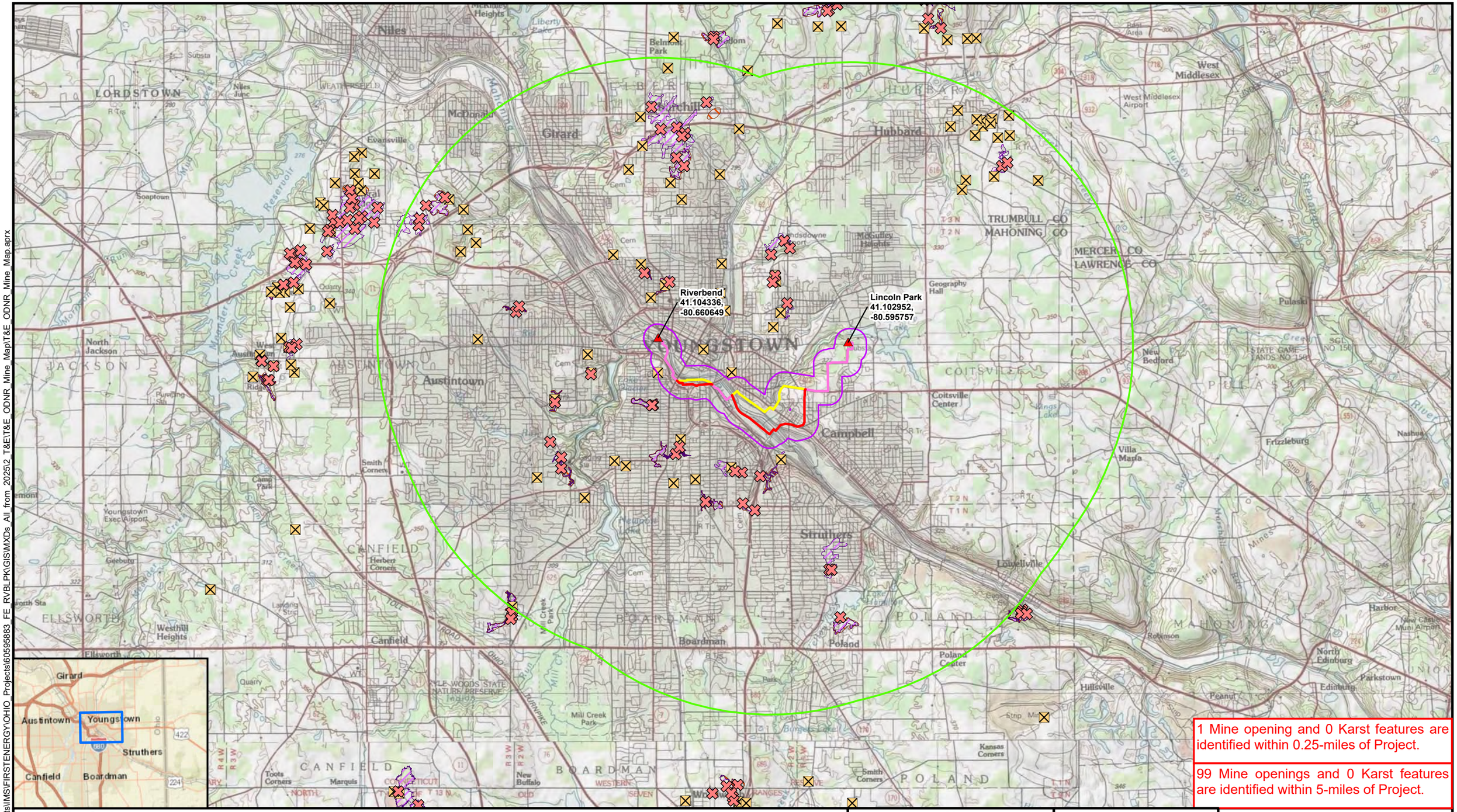


Brian Miller
Environmental Project Manager
AECOM

Table 1: Responses to ODNR Comments

ODNR Recommendation / Requirement	AECOM Response	Conclusion
Hibernacula Review Indiana bat, northern long-eared bat, little brown bat, and tricolored bat • *The DOW also recommends that a desktop habitat assessment is conducted, followed by a field assessment if needed, to determine if a potential hibernaculum is present within the project area. If a habitat assessment finds that a potential hibernaculum is present within 0.25 miles of Project area, send information to Eileen Wyza for recommendations.* • AECOM understands that the ODNR DOW, in conjunction with the USFWS, released new guidance (Joint Guidance for Bat Surveys, May 2025) requesting a desktop review of potential hibernacula within 5 miles of the Project area for projects that require subsurface disturbance to bedrock materials (ODNR and USFWS, 2025).	AECOM completed a desktop review of publicly available data and aerial imagery to identify the potential for known bat winter hibernacula within 0.25 miles and 5 miles of the Project area (**Attachment 1**). The data sources utilized include USGS topographical maps, ODNR's Division of Mineral Resources and Geological Survey Data for Known Mining Activity and Karst Geology/Sinkholes. One mine opening and 0 karst features were identified within 0.25 miles of Project. The one mine opening (MG-0GS-026) did not determine potential hibernacula as ODNR data suggest feature was covered by houses and visual inspections from the road to not confirm presence of the historic mine opening. 99 mine openings and no karst features have been identified within a 5-mile radius of the Project area. The Project will have minor subsurface disturbance impacts, limited to the installation of transmission line structures and their associated foundations. The installation process may involve drill shafts (direct embed) or other excavation methods that do not require blasting. Due to the nature of transmission line activities, most structure foundations will avoid placement within the bedrock material due to gaps between structures and/or foundation types. If activities are required to impact bedrock, ATSI will adhere to subsurface disturbance guidance and avoid installing structures between November 15 and March 31.	Project is not likely to impact hibernacula within 0.25 miles of the Project area due to absence of potential hibernacula within the Project area. Project is not likely to impact bedrock material and if bedrock is required to be impacted, ATSI will adhere to subsurface disturbance avoidance between November 15 and March 31.
Freshwater Mussel Species *If in-water work is planned in any stream that meets Ohio Mussel Survey Protocol (2024), the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol. If there is no in-water work proposed, impacts to mussels are not likely.*	ATSI intends to aerial span all stream crossing via transmission line and/or temporary timber mat bridge to be installed above the ordinary high-water mark. As no in-water work is anticipated, ATSI does not anticipate impacting the mussel species or their habitat.	No effect; Project does not involve in-water work.
Western Banded Killifish *The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact this or other aquatic species.*	ATSI intends to aerial span all stream crossing via transmission line and/or temporary timber mat bridge to be installed above the ordinary high-water mark. As no in-water work is anticipated, ATSI does not anticipate impacting the western banded killifish and/or its habitat.	No effect; Project does not involve in-water work.
Eastern Massasauga ODNR stated "Due to location, type of habitat within the Project area, and the type of work proposed, this Project is not likely to impact the eastern massasauga.	No further comments necessary for the Project.	No effect.

Attachment 1: Bat Hibernacula Map



1 Mine opening and 0 Karst features are identified within 0.25-miles of Project.

99 Mine openings and 0 Karst features are identified within 5-miles of Project.

- Existing Station
- **Lincoln Park-Riverbend 138 kV Transmission Line**
- Alternate Route
- Common Route
- Preferred Route
- 0.25-Mile Review Area
- 5-Mile Review Area
- Abandoned Underground Mines - Openings
- Abandoned Underground Mines - Point of Unknown Extent
- Abandoned Underground Mine
- Abandoned Underground Mines - Partially Known Extent
- Surface Mine - Inactive Coal Mining Operation

N

0 2,000 4,000 8,000 12,000 Feet

ATSI

American Transmission Systems, Inc.
Youngstown 138kV Reinforcement Project
Potential Hibernacula within
Quarter and 5-mile of Project Area

Issued: July 16, 2025

URS Path: X:\DCS\Projects\IMS\FIRSTENERGY\OHIO_Projects\60595883_FE_RVBLPK\GIS\MXDs_All_from_2025\2_T&E\T&E_ODNR_Mine_Map\T&E_ODNR_Mine_Map.aprx

Miller, Brian

From: Eileen.Wyza@dnr.ohio.gov
Sent: Tuesday, July 22, 2025 1:17 PM
To: Miller, Brian; Mike.pettegrew@dnr.ohio.go
Cc: shumphrys@firstenergycorp.com; Ruggiero, Augustine
Subject: RE: Response to 25-0279 Environmental Review - Youngstown Reinforcement - Hibernacula and Species Review

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Hello Brian,

Thank you for reaching out. Per review of the desktop survey provided for the Youngstown Reinforcement Project, the Ohio Division of Wildlife concurs with your assessment that no caves or cliffs occur in the project area. DOW also concurs that numerous potential mine openings are within 5 miles of the project area. DOW recommends that (in agreement with AECOM's response and project plan), due to the presence of possible nearby mine openings, any subsurface disturbance that will impact bedrock should occur between November 15 and March 31. Any subsurface work not impacting bedrock for this project is unlikely to impact hibernating bats that may be present in the nearby underground mines and therefore can occur any time of year.

Should any reported conditions change before or during construction, please contact me for additional guidance.

Thank you,

Eileen Wyza, Ph.D.
(she/her/hers)
Wildlife Biologist
Ohio Division of Wildlife
Phone: 614-265-6764
Email: Eileen.Wyza@dnr.ohio.gov

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Please consider the environment before printing this email.

From:

Miller, Brian <brian.miller1@aecom.com>

Sent: Monday, July 21, 2025 2:52 PM
To: Mike.pettegrew@dnr.ohio.go; Wyza, Eileen <Eileen.Wyza@dnr.ohio.gov>
Cc: Humphrys, Scott M <shumphrys@firstenergycorp.com>; Ruggiero, Augustine <aruggiero@firstenergycorp.com>
Subject: Response to 25-0279 Environmental Review - Youngstown Reinforcement - Hibernacula and Species Review

Hi Mike/Eileen,

Please find attached desktop assessment for the species within range of the Project area. ATSI is seeking your concurrence for justification and review of the potential hibernacula and adherence to avoidance measures.

If you need anything else, please let me know.

Brian J. Miller
Project Manager / Senior Ecologist

M +1-412-667-9172
brian.miller1@aecom.com

AECOM
436 Seventh Avenue, Suite 1200
Pittsburgh, PA 15219
aecom.com



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In reply refer to:
2025-MAH-64961

June 3, 2025

Andrew Wyatt
Senior Archaeologist
Cultural Resources Department
AECOM
100 Sterling Parkway
Mechanicsburg, PA 17050
Email: andrew.wyatt@aecom.com

RE: Section 106 Review-Youngstown 138kV Reinforcement Transmission Line Project, Mahoning County, Ohio.

Dear Mr. Wyatt:

This letter is in response to the correspondence received on April 30, 2025, regarding the above-referenced project in Mahoning County, Ohio. We appreciate the opportunity to comment on this project. The comments of the Ohio State Historic Preservation Office (SHPO) are made pursuant to Section 149.53 of the Ohio Revised Code (O.R.C.) and the Ohio Power Siting Board rules for siting this project (OAC 4906-5). The comments of the Ohio SHPO are also submitted in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. 306108 [36 CFR 800]).

The proposed undertaking involves the construction of a new 138kV transmission line with 106 new steel monopoles within a proposed 65-ft. wide by 6.26-mile right-of-way (ROW) corridor, which is defined as the direct Area of Potential Effect (APE). The following review and comments pertain only to the *Phase I Archaeological Survey Report for the Youngstown 138kV Reinforcement Transmission Line Project, Mahoning County, Ohio* by AECOM (Wyatt and Seiter, 2025). The architectural component has been submitted in a stand-alone report, and therefore the SHPO review will be under a separate cover.

The archaeological survey involved a literature review, shovel test unit excavations, and visual inspection of the entire APE, as defined above. A total of 114 shovel test units were excavated within the APE while the remaining portions were subjected to visual inspection. According to the literature review, no historic properties or districts are documented within the direct APE. However, two above-ground resources are within the APE as well as portions of a previous cultural resource survey. The results of the archaeological survey resulted in the identification of five (5) sites. These have been documented in the Ohio Archaeological Inventory (OAI) as 33MH220-33MH224. These sites represent historic-era refuse scatters and were determined not eligible for the National Register of Historic Places (NRHP). No additional archaeological work is recommended. The SHPO agrees with this determination.

After careful review of the archaeological report, it is the SHPO's opinion that, as proposed, the project will have no effect on significant archaeological resources. Furthermore, the SHPO also agrees that, as proposed, no further archaeological investigations are warranted for the APE. No further coordination in regard to archaeology is required for this project unless the scope of work changes or new/additional archaeological remains are discovered during the course of the project. In such a situation, this office should be contacted as required by 36 CFR § 800.13.

If you have any questions concerning this review, please contact me via email at sbiehl@ohiohistory.org. Thank you for your cooperation.

Sincerely,

Stephen M. Biehl, Project Reviews Manager-Archaeology
Resource Protection and Review
State Historic Preservation Office

RPR Serial No. 1108777

"Please be advised that this is a Section 106 decision. This review decision may not extend to other SHPO programs."

In reply, please refer to:
2025-MAH-64961

June 9, 2025

Andrew Wyatt
Senior Archaeologist
AECOM
100 Sterling Parkway
Mechanicsburg, PA 17050
Email: andrew.wyatt@aecom.com

RE: Section 106 Review-Youngstown 138kV Reinforcement Transmission Line Project, Mahoning County, Ohio

Dear Mr. Wyatt:

This letter is in response to the correspondence received on April 30, 2025, regarding the above-referenced project in Mahoning County, Ohio. We appreciate the opportunity to comment on this project. The comments of the Ohio State Historic Preservation Office (SHPO) are made pursuant to Section 149.53 of the Ohio Revised Code (O.R.C.) and the Ohio Power Siting Board rules for siting this project (OAC 4906-5). The comments of the Ohio SHPO are also submitted in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. 306108 [36 CFR 800]).

The proposed undertaking involves the construction of a new 138kV transmission line with 106 new steel monopoles within a proposed 65-ft. wide by 6.26-mile right-of-way (ROW) corridor, which is defined as the direct Area of Potential Effect (APE). The following review and comments pertain only to the Architectural History Survey Report for the Youngstown 138kV Reinforcement Transmission Line Project, Mahoning County, Ohio by AECOM. The archaeology component has been submitted in a stand-alone report, and therefore the SHPO review will be under a separate letter. This project was previously reviewed in 2021 (2021MAH5118) and found that the *Preferred Route* would have no adverse effect on historic resources. Since the 2021 submission, the 6.26-mile ROW has been modified to include 5.7 miles of transmission line and 80 poles outside of the areas previously reviewed under 2021MAH51118. The architectural resource assessment for this new area is detailed below.

The following comments pertain to the *Phase I Architectural History Survey for the Youngstown 138kV Reinforcement Transmission Line Project Report* (AECOM, 2025). A historic reconnaissance survey was conducted as part of the investigations and found twenty (20) previously inventoried above ground resources within the 5.7-mile-long section of the *Preferred Route* outside of the areas previously reviewed under 2021MAH5118, ten of which have been demolished. The remaining ten resources include one resource previously determined eligible for inclusion in the National Register

of Historic Places (NRHP), but the submission recommended that there would be no effect to any of the ten resources due to the existing modern landscape and existing infrastructure in similar size/scale as those in the proposed project. The survey also identified 145 previously unidentified above ground resources within the Project APE and inventoried fifty-six (56), none of which were recommended as eligible for inclusion in the NRHP. The SHPO agrees with these recommendations. Based on the information provided, it is our opinion that the project will have no effect on historic properties. No further coordination in regard to the history/ architecture properties are required for the *Preferred Route* unless the scope of work changes. In such a situation, this office should be contacted as required by 36 CFR § 800.13.

If you have any questions, please contact me at arosenow@ohiohistory.org. Thank you for your cooperation.

Sincerely,

Abigail Rosenow

Abigail Rosenow
Project Reviews Manager – Architecture
Resource Protection and Review
State Historic Preservation Office

"Please be advised that this is a Section 106 decision. This review decision may not extend to other SHPO programs."

RPR Serial No: 1108778