

# **LINCOLN PARK – RIVERBEND 138 kV TRANSMISSION LINE PROJECT**

## ***WETLAND DELINEATION AND STREAM ASSESSMENT REPORT***

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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
GPS	Global Positioning 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
PHW	Primary Headwater
PSS	Palustrine Scrub/Shrub
QHEI	Qualitative Habitat Evaluation Index
ROW	Right-of-way
UPL	Upland
U.S.	United States
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WWH	Warmwater Habitat

## **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, Mahoning County, Ohio. The Lincoln Park - Riverbend 138 kV Transmission Line (Project) is located on the United States Geological Survey (USGS) Youngstown, Ohio and Campbell, Ohio 7.5-minute series topographic quadrangles (National Geographic Society, 2013) (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 41.1043°, -80.6603° and the Lincoln Park Substation are 41.103°, -80.5953°. The limits of the Project investigation are defined by the survey boundary (Figure 2 and Figure 3).

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. 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.

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 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 Nationwide Permit Conditions.

Crab Creek and Mahoning River have Ohio Administrative Code (OAC) Chapter 3745-1 aquatic life habitat use designations of Warm Water Habitat (WWH). Dry Run has an OAC Chapter 3745-1 aquatic life habitat use designation of WWH except for the portion within the Project area located between Oak Street (RM 1.42) and Wilson Avenue (RM 0.31), which is listed as Coldwater Habitat (CWH) (OAC 2018).

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 2018b).

## **2.0 METHODOLOGY**

Prior to conducting field surveys, digital and published county Natural Resources Conservation Service (NRCS) soil surveys, U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps, and U.S. Geological Survey (USGS) 7.5-minute topographic maps were reviewed as an exercise to identify the occurrence and location of potential wetland areas (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. The Project’s survey boundary is approximately 388 acres that encompasses the proposed 65-foot ROW centered along the Project’s proposed 1.21-miles common route, 4.00-miles preferred route, and 5.02-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 as shown on Figure 3

AECOM ecologists walked the Project’s survey boundary, access roads, and work areas to conduct a wetland delineation and stream assessment. Initial field investigations were conducted on January 6<sup>th</sup> to 8<sup>th</sup>, August 20, October 06, November 03, 2020, and March 11, 2021. 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 in August 2010 by the USACE to address regional wetland characteristics and improve the accuracy and efficiency of wetland delineation procedures. Version 2.0 was released in January 2012. 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 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.

Land uses observed within the Project's survey boundary were assigned a general classification based upon the principal land characteristics of the location as observed through aerial photography review and observations during the field surveys.

### **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 National Weather Service WETS data review from the NRCS National Water and Climate Center 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 period 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 (NRCS 2018b).

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 (USACE, 2010). 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 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 includes 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 includes 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 a 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).

### **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<sup>2</sup>) versus larger streams (L are those with a watershed area greater than 20 mi<sup>2</sup>). 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 mi<sup>2</sup> (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 Nationwide Permits (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

AECOM identified a total of 32 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, 11 wetlands and 23 streams, and 10 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

Soils within each wetland were observed and documented as part of the delineation methodology. According to the USDA/NRCS Web Soil Surveys of Mahoning County, Ohio (NRCS 2018c) and the NRCS Hydric Soils Lists of Ohio, fourteen soil series are mapped within the Project's survey boundary (NRCS 2018a). Of these soil series, five soil map units are listed as hydric. Table 1 provides a detailed overview of all soil series and soil map units within the Project's survey boundary. Soil map units located within the Project's survey boundary are shown on Figure 2.

**TABLE 1**  
**SOIL MAP UNITS AND DESCRIPTIONS 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
	BtB	Bogart loam, till substratum, 2 to 6 percent slopes	Terraces	No	NA

**TABLE 1**  
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**TRANSMISSION LINE PROJECT'S SURVEY BOUNDARY**

Soil Series	Symbol	Map Unit Description	Topographic Setting	Hydric	Hydric Component
Chagrin	Ck	Chagrin loam	Flood Plains	No	NA
Chili	CID	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 (Relict), Terraces on Valleys	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
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 on Valleys	Yes	Sebring (85)
	Se	Sebring silt loam, till substratum, 0 to 2 percent slopes	Till Plains, Terraces on Valleys	Yes	Sebring (85)

**TABLE 1**  
**SOIL MAP UNITS AND DESCRIPTIONS WITHIN THE LINCOLN PARK-RIVERBEND 138 kV**  
**TRANSMISSION LINE PROJECT'S SURVEY BOUNDARY**

Soil Series	Symbol	Map Unit Description	Topographic Setting	Hydric	Hydric Component
	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	-	Yes	-

USDA NRCS. 2017 Soil Survey Geographic (SSURGO) Database. Available online at: <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>

USDA NRCS. 2017. 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 NWI maps of the Campbell and Youngstown, Ohio quadrangles, the Project's survey boundary contains seven mapped NWI wetlands: 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 mapped NWI features that were delineated in the field are described in Table 2. Locations of the NWI mapped wetlands are shown on Figure 2.

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), and

- 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 32 wetland complexes, ranging in size from less than 0.01 acre to 3.5 acres within the Project's survey boundary. Some wetland boundaries extend beyond these areas, but only what was identified within the Project survey boundary were assessed. The 32 wetland complexes that were identified within the Project survey boundary are of seven different wetland habitat types and includes: 13 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. Table 2 provides a summary of the delineated wetlands within the Project's survey boundary broken out by each survey route (i.e. common route, preferred route, and alternative route). Acreage values provided in Table 2 have been rounded to up to two decimal places.

The locations and approximate extent of the wetlands identified within the Project's survey boundary is shown on Figure 3. Completed USACE and ORAM wetland delineation forms are provided in Appendix A and B, respectively. Color photographs taken of selected wetlands are provided in Appendix D.



**TABLE 2**  
**DELINEATED WETLANDS WITHIN THE LINCOLN PARK-RIVERBEND 138 kV TRANSMISSION LINE**  
**PROJECT'S SURVEY BOUNDARY**

Wetland Name	Latitude	Longitude	Cowardin Classification <sup>1</sup>	NWI Classification	ORAM Score	ORAM Category <sup>2</sup>	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	0.05	0.05
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	0.19	0.06
Wetland RLP-11	41.0978210	-80.5975803	PEM	NA	37	Category 2	0.02	0.01
Wetland RLP-12	41.0981300	-80.5962091	PEM	NA	28	Category 1	0.04	0.04
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	0.37	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	4.39	0.00
Wetland RLP-16b	41.1014287	-80.5970648	PSS	PSS1C			0.60	0.00
Wetland RLP-16c	41.1013430	-80.5964515	PSS	NA			1.07	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			0.11	0.03
Wetland RLP-17c	41.1021188	-80.5950172	PFO	NA			1.54	0.07
Wetland RLP-28	41.100863	-80.594352	PFO	NA	31	Category 2	0.09	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						9.81	0.52
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	0.08	0.00
Wetland RLP-03	41.0968282	-80.6088334	PSS	NA	25	Category 1	1.36	<0.01 <sup>3</sup>
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	0.15	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 LINCOLN PARK-RIVERBEND 138 kV TRANSMISSION LINE**  
**PROJECT'S SURVEY BOUNDARY**

Wetland Name	Latitude	Longitude	Cowardin Classification <sup>1</sup>	NWI Classification	ORAM Score	ORAM Category <sup>2</sup>	Acreage within Survey Boundary	Acreage within 65-ft ROW
Wetland RLP-29a	41.09655	-80.611437	PSS	NA	43.5	Category 2	0.16	0.00
Wetland RLP-29b	41.096412	-80.611821	PEM	NA	43.5	Category 2	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	0.04	0.00
Wetland RLP-32	41.094476	-80.613944	PFO	NA	32	Category 2	0.09	0.00
Sub-Total: 11	PEM: 5, PSS: 3, PFO:2, and PEM/PSS:1						2.76	<0.01 <sup>3</sup>
Alternate Route								
Wetland RLP-18a	41.0922675	-80.6029678	PFO	NA	39	Category 2	0.98	0.40
Wetland RLP-18b	41.0926057	-80.6031446	PEM	NA			0.08	0.04
Wetland RLP-19a	41.0914440	-80.6023820	PSS	NA	41	Category 2	0.45	0
Wetland RLP-19b	41.0919480	-80.6023280	PFO	PSS1C			0.73	0
Wetland RLP-20	41.0910272	-80.6091075	PFO	NA	42	Category 2	0.31	0
Wetland RLP-21a	41.0909485	-80.6098513	PEM	NA	34.5	Category 2	0.15	0.01
Wetland RLP-21b	41.0908724	-80.6101750	PFO	NA			0.11	0.07
Wetland RLP-22	41.0902141	-80.6108262	PEM	NA	26	Category 1	0.13	0.04
Wetland RLP-23	41.0822853	-80.6107501	PEM	NA	35.5	Category 2	0.13	0.07
Wetland RLP-24	41.0818870	-80.6111817	PEM	NA	30.5	Category 2	0.08	0.04
Wetland RLP-25	41.0814969	-80.6114122	PEM	NA	19.5	Category 1	0.03	0.03
Wetland RLP-26	41.0815714	-80.6130651	PEM	NA	8	Category 1	0.04	0
Wetland RLP-27	41.0886039	-80.6381854	PEM	NA	19	Category 1	<0.01	0
Sub-Total: 10	PEM: 6, PFO:1, PSS/PFO: 1, and PEM/PFO: 2						3.22	0.71
Grand Total: 32	PEM: 13, PSS: 5, PFO:5, PSS/PFO: 2, PEM/PFO: 3, PEM/PSS:2, and PEM/PSS/PFO: 1						15.79	1.23

1. Cowardin Classification: PEM = palustrine emergent, PSS= Palustrine shrub/scrub, and PFO=palustrine forested
2. ORAM Category: The Ohio Rapid Assessment Method for Wetlands v. 5.0, User's Manual and Scoring Forms state that if a wetland score falls into the transitional range, the wetland must be given the higher Category unless scientific data can prove it should be in a lower Category. Therefore, AECOM has assigned the identified wetlands to the higher category level and are indicated with an asterix (\*) following the category classification.
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, 10 wetlands are identified as Category 1 and 21 wetlands as Category 2. Wetland RLP-01 received the lowest ORAM score, 7, while Wetland RLP-17 had the highest score, 45.5. A breakdown of ORAM scores can be found in Table 2 and Table 3, below. Completed ORAM forms are provided in Appendix B.

**TABLE 3**  
**SUMMARY OF DELINEATED WETLANDS WITHIN THE LINCOLN PARK-RIVERBEND**  
**138 kV TRANSMISSION LINE PROJECT'S SURVEY BOUNDARY**

Cowardin Wetland Type <sup>1</sup>	ORAM Category 1	ORAM Category 2	ORAM Category 3	Number of Wetlands	Acreage within Project's Survey Boundary	Acreage within 65-Foot ROW
<b>Common Route</b>						
PEM	1	1	0	2	0.06	0.05
PSS	0	2	0	2	0.5	0.06
PFO	0	1	0	1	0.46	0.16
PEM/PFO	0	2	0	2	0.29	0.03
PEM/PSS	0	2	0	2	0.32	0.07
PSS/PFO	0	1	0	1	6.06	0.00
PEM/PSS/PFO	0	1	0	1	2.12	0.15
<b>Sub-Total</b>	<b>1</b>	<b>10</b>	<b>0</b>	<b>11</b>	<b>7.35</b>	<b>0.52</b>
<b>Preferred Route</b>						
PEM	3	2	0	5	0.44	0.00
PSS	2	1	0	3	1.96	<0.01
PFO	0	2	0	2	0.17	0.00
PEM/PSS	0	0	0	1	0.19	0.00
<b>Sub-Total</b>	<b>5</b>	<b>6</b>	<b>0</b>	<b>11</b>	<b>2.76</b>	<b>&lt;0.01</b>
<b>Alternative Route</b>						
PEM	4	2	0	6	0.40	0.19
PFO	0	1	0	1	0.31	0.00
PSS/PFO	0	1	0	1	1.19	0.00
PEM/PFO	0	2	0	2	1.32	0.52
<b>Sub-Total</b>	<b>4</b>	<b>6</b>	<b>0</b>	<b>10</b>	<b>3.22</b>	<b>0.71</b>
<b>Grand-Total</b>						
PEM	8	5	0	13	0.90	0.22
PSS	2	3	0	5	2.46	0.06
PFO	0	5	0	5	0.94	0.15
PEM/PFO	0	3	0	3	1.61	0.53
PEM/PSS	0	2	0	3	0.51	0.07
PSS/PFO	0	2	0	2	7.25	0.00
PEM/PSS/PFO	0	1	0	1	2.12	0.13
<b>Total</b>	<b>10</b>	<b>21</b>	<b>0</b>	<b>32</b>	<b>15.79</b>	<b>1.23</b>

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 eight 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**

AECOM identified 35 streams, totaling 23,937 linear feet, within the Project's survey boundary, as listed in Table 4. The flow regimes are composed of 20 ephemeral, 9 intermittent, and 6 perennial streams. The locations of the streams identified within the Project's survey boundary are shown on Figure 3. Table 4 provides a summary of the delineated streams within the Project's survey boundary.

AECOM acknowledges that the identified ephemeral stream would no longer be considered a jurisdictional water of the U.S. under the Navigable Waters Protection Rule, which became

effective June 22, 2020. However, ephemerals streams are likely to be considered a water of the state and only the USACE can make final determinations as to jurisdiction of a “Waters of the U.S.”.

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 WWH. Dry Run is listed as both WWH and CWH with thin 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 2018b) with visible characteristics that were documented from banks during field reconnaissance. AECOM evaluations 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.

**TABLE 4**

**DELINEATED STREAMS WITHIN THE LINCOLN PARK-RIVERBEND 138 KV TRANSMISSION LINE PROJECT'S SURVEY BOUNDARY**

Report Name	Latitude	Longitude	Waterbody	Flow Regime	Form Used <sup>1,2</sup>	Score <sup>3</sup>	Class or Narrative Description <sup>3</sup>	Bankfull Width (feet)	Maximum Pool Depth (inches)	OEPA 401 WQC Eligibility for NWP <sup>4</sup>	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	49	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	Modified 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
Preferred Route (Continued)												

**TABLE 4**

**DELINEATED STREAMS WITHIN THE LINCOLN PARK-RIVERBEND 138 KV TRANSMISSION LINE PROJECT'S SURVEY BOUNDARY**

Report Name	Latitude	Longitude	Waterbody	Flow Regime	Form Used <sup>1,2</sup>	Score <sup>3</sup>	Class or Narrative Description <sup>3</sup>	Bankfull Width (feet)	Maximum Pool Depth (inches)	OEPA 401 WQC Eligibility for NWP <sup>4</sup>	Linear Feet within Survey Boundary	Linear Feet within 65-ft ROW
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	Modified 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
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	41.094173	-80.613996	UNT to Dry Run	Ephemeral	HHEI	14	Modified Class 1	3	0	Eligible	163	0
Stream RLP-31	41.096385	-80.611233	UNT to Dry Run	Ephemeral	HHEI	12	Modified Class 1	3	0	Eligible	81	48
Stream RLP-32	41.097274	-80.609703	UNT to Dry Run	Ephemeral	HHEI	15	Modified Class 1	3	0	Eligible	95	0
Stream RLP-33	41.097412	-80.609366	UNT to Dry Run	Ephemeral	HHEI	14	Modified Class 1	3	0	Eligible	67	0
Stream RLP-34	41.09746	-80.609144	UNT to Dry Run	Ephemeral	HHEI	15	Modified Class 1	3	0	Eligible	33	0

**TABLE 4**

**DELINEATED STREAMS WITHIN THE LINCOLN PARK-RIVERBEND 138 KV TRANSMISSION LINE PROJECT'S SURVEY BOUNDARY**

Report Name	Latitude	Longitude	Waterbody	Flow Regime	Form Used <sup>1,2</sup>	Score <sup>3</sup>	Class or Narrative Description <sup>3</sup>	Bankfull Width (feet)	Maximum Pool Depth (inches)	OEPA 401 WQC Eligibility for NWP <sup>4</sup>	Linear Feet within Survey Boundary	Linear Feet within 65-ft ROW
Stream RLP-35	41.096695	-80.610562	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	Modified Class 1	2	0.5	Eligible	314	58
Stream RLP-19	41.09623	-80.60281	UNT to Dry Run	Ephemeral	HHEI	19	Modified Class 1	0.5	0.5	Eligible	309	65
Stream RLP-20	41.09471	-80.60326	UNT to Dry Run	Perennial	HHEI	69	Modified Class 2	5	10	Eligible	296	51
Alternate Route (Continued)												
Stream RLP-21	41.09329	-80.60297	UNT to Dry Run	Intermittent	HHEI	25	Modified Class 1	2	0.5	Eligible	186	57
Stream RLP-22	41.09023	-80.61075	UNT to Mahoning River	Ephemeral	HHEI	19	Modified 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 LINCOLN PARK-RIVERBEND 138 KV TRANSMISSION LINE PROJECT'S SURVEY BOUNDARY**

Report Name	Latitude	Longitude	Waterbody	Flow Regime	Form Used <sup>1,2</sup>	Score <sup>3</sup>	Class or Narrative Description <sup>3</sup>	Bankfull Width (feet)	Maximum Pool Depth (inches)	OEPA 401 WQC Eligibility for NWP <sup>4</sup>	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	Modified 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
<b>Sub-Total (12)</b>			<b>Perennial: 2, Intermittent: 3, and Ephemeral: 7</b>								<b>7,102</b>	<b>1,437</b>
<b>Grand-Total (35)<sup>5</sup></b>			<b>Perennial: 6<sup>5</sup>, Intermittent: 9, and Ephemeral: 20</b>								<b>23,937</b>	<b>2,374</b>

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://oeпа.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 stream 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. The QHEI streams totaled 13,559 linear feet within the Project's survey boundary. The completed QHEI data forms are provided in Appendix C. Representative color photographs were taken during the field survey and are provided in 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 2018b). 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 six Class 1 PHWM streams, 18 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*** – Six streams, totaling 1,200 linear feet within the Project's survey boundary, with scores ranging from 13 to 28 were identified during the field investigations. All exhibited ephemeral flow regime. 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*** – Eighteen streams, totaling 4,361 linear feet within the Project's survey boundary, with scores ranging from 12 to 30 were identified during the field investigations. Eight of these streams exhibited ephemeral flow regime and four exhibited intermittent flow regimes. 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*** – One stream, totaling 987 linear feet within the Project's survey boundary, with a score of 46 was identified during the field investigations. The stream, Stream RLP-17, was identified as having an intermittent flow regime with a substrate composed of gravel and silt, with lesser amounts of sand and leaf pack/woody debris. The maximum pool depth for the stream was 3 inches and average bankfull width was 4.1 feet.

***Modified Class 2 PHWH Streams*** – Six streams, totaling 3,828 linear feet within the Project's survey boundary, with scores ranging from 39 to 69 were identified during the field investigations. Two exhibited perennial flow regime and four exhibited intermittent flow regime. 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 32 wetland complexes, and 35 streams. No ponds were delineated within the Project's survey boundary. The 35 wetland complexes that were identified as either ORAM Category 1 or Category 2 wetlands within the Project's survey boundary and were composed of seven different wetland habitat types including: 13 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<sup>2</sup>) and four streams were assessed using the QHEI methodology (drainage area greater than 1 mi<sup>2</sup>). 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.

On June 22, 2020, the Navigable Waters Protection Rule under the Clean Water Act (CWA) was modified and in most cases, excluded ephemeral stream as being jurisdictional waters of the United States. Therefore, the jurisdictional status of ephemeral streams shall be left to the federal review, if required, and AECOM has preliminarily determined that all assessed streams and wetlands within the AECOM survey area are jurisdictional (i.e., waters of the U.S.). The locations of the streams and wetlands identified within the survey area are shown on Figure 3. As the ephemeral stream identified within the Project Survey Area would likely be considered non-jurisdictional by the USACE, only the USACE through a jurisdictional determination could evaluate the resource as a "water of the U.S.". Additionally, ephemeral streams would likely still be considered a state water and applicable isolated waters permitting and conditions could apply if determined not a "waters of the U.S".

AECOM has preliminarily determined that all assessed streams and wetlands within the Project's survey boundary appear to be jurisdictional (i.e., Waters of the U.S.), as they all appear to be tributaries or wetlands that flow into or combine with other streams (waters of the U.S). The locations of the streams and wetlands identified within the Project's survey boundary are shown on Figure 3.

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.

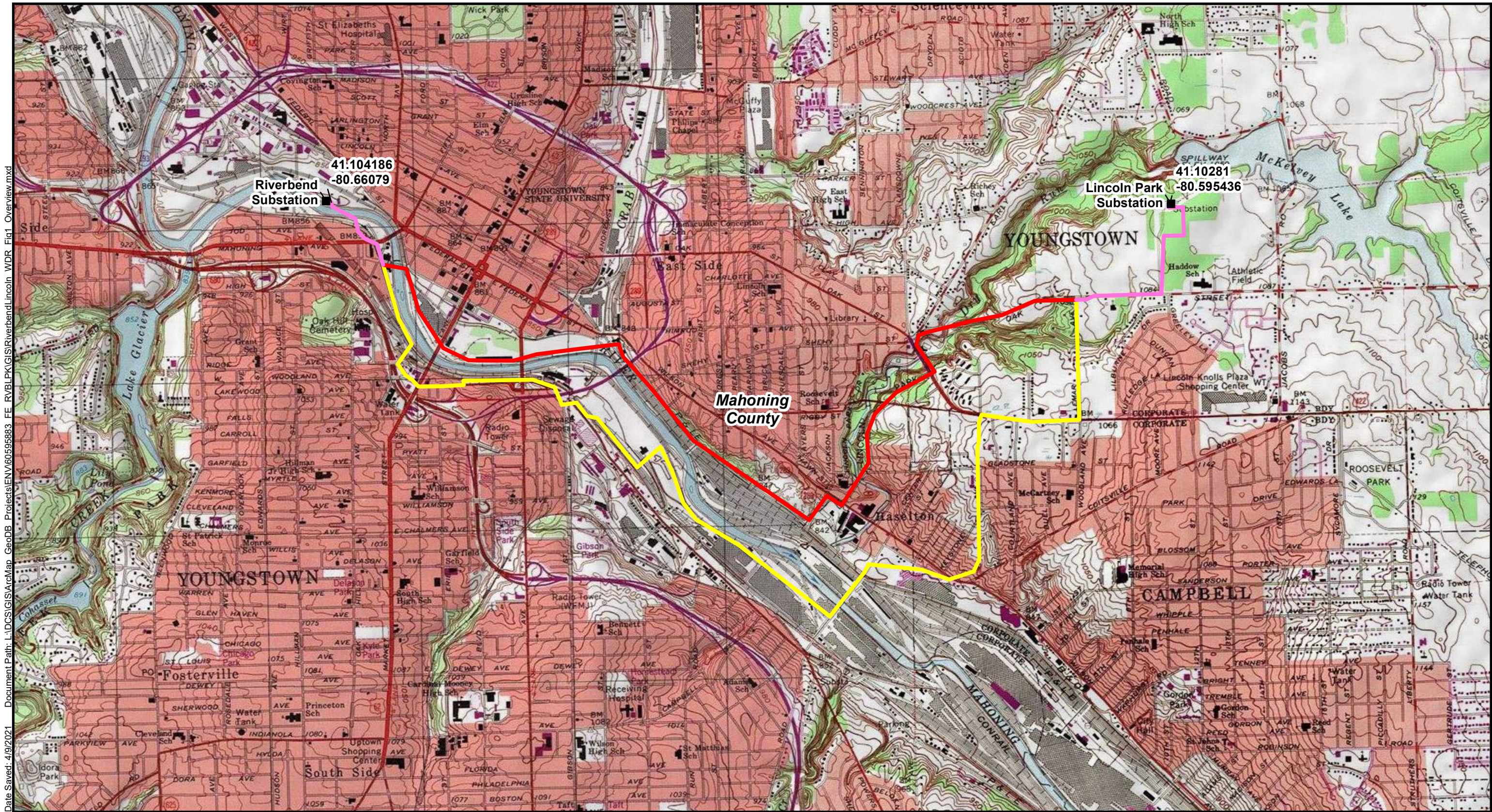
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**LEGEND**

- Existing Substation
- Lincoln Park-Riverbend 138 kV Transmission Line**
- Alternate Route
- Common Route
- Preferred Route

0 0.5 1  
Miles

BASE MAP SOURCE:  
ArcGIS Online, USA Topo Maps

**ATSI** Lincoln Park-Riverbend 138kV  
Transmission Line Project

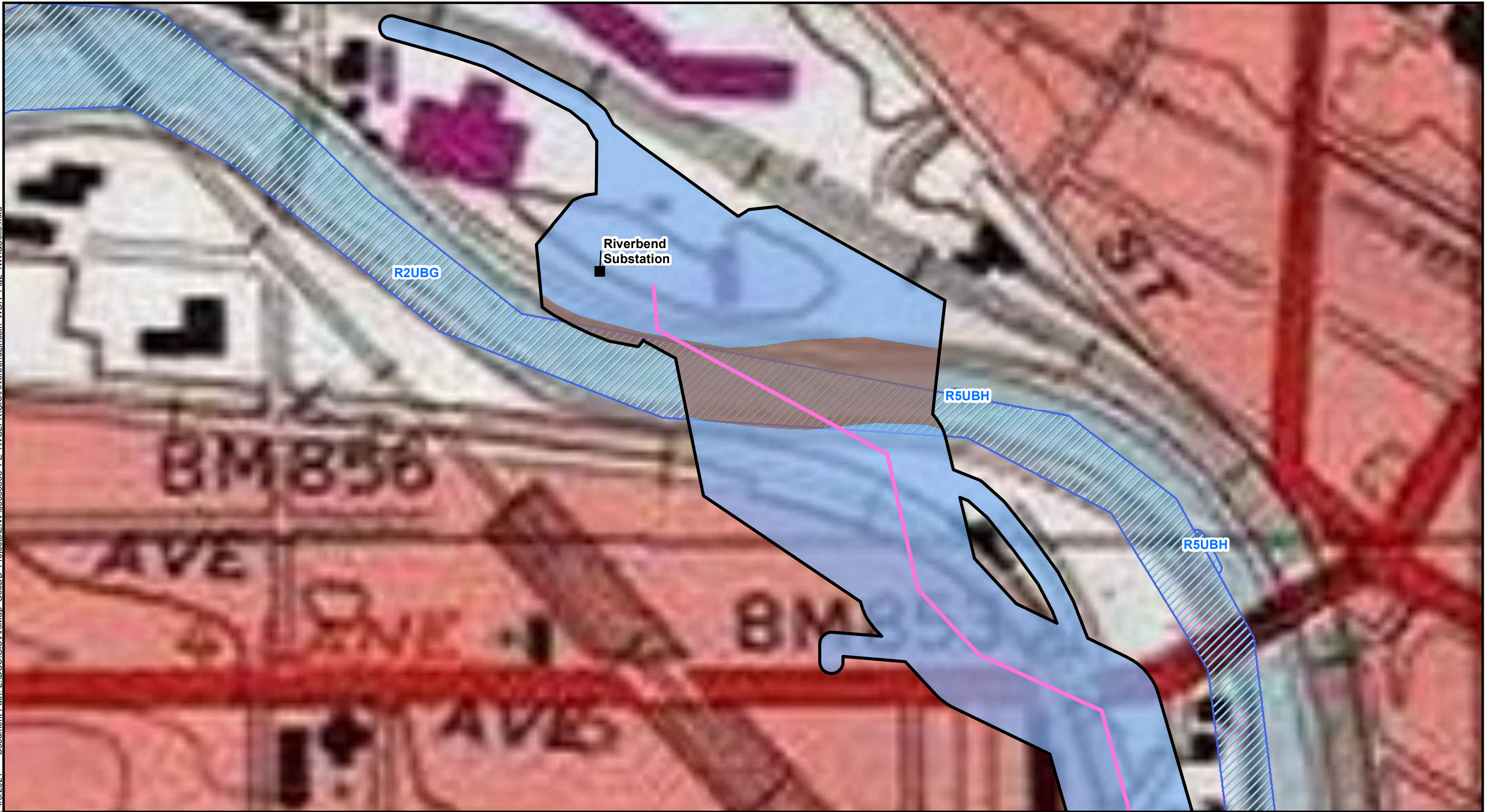
**FIGURE 1**  
OVERVIEW MAP

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**AECOM**



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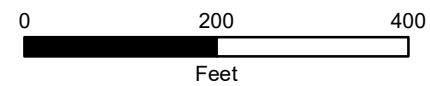
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Survey Boundary  
National Wetland Inventory (NWI)

**MUSYM**

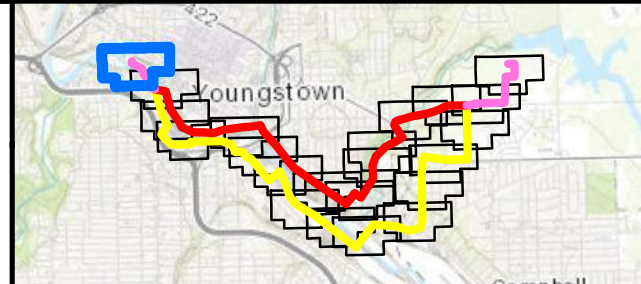
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	FcB	RuB	Wc
	FhB	Sb	

**Lincoln Park-Riverbend 138 kV Transmission Line**

Alternate Route  
Common Route  
Preferred Route



BASE MAP SOURCE:  
ArcGIS Online, USA Topo Maps



Lincoln Park-Riverbend 138kV  
Transmission Line Project

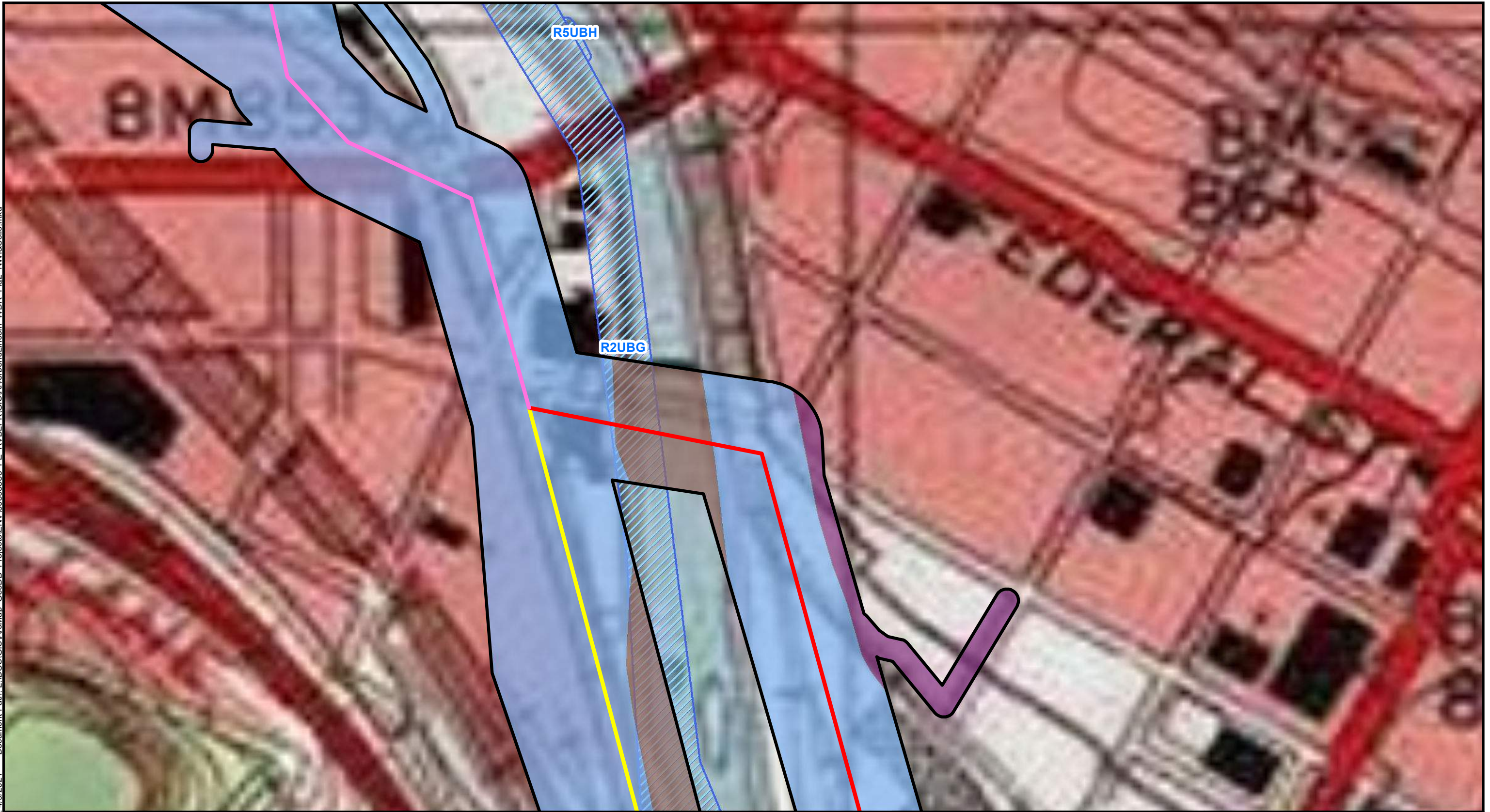
FIGURE 2  
SHEET 1 of 22  
SOIL MAP UNIT AND NATIONAL  
WETLAND INVENTORY MAP

JOB NO. 60595883





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**LEGEND**

Existing Substation  
Survey Boundary  
National Wetland Inventory (NWI)

**MUSYM**

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BtB	CmC	JuB	Sg
Ck	CoB	Lc	Ua
	CoC	LdE2	W
	DkF	RaB	WbB
	FcB	RuB	Wc
	FhB	Sb	

**Lincoln Park-Riverbend 138 kV Transmission Line**

Alternate Route  
Common Route  
Preferred Route

0 200 400  
Feet

BASE MAP SOURCE:  
ArcGIS Online, USA Topo Maps

North Arrow

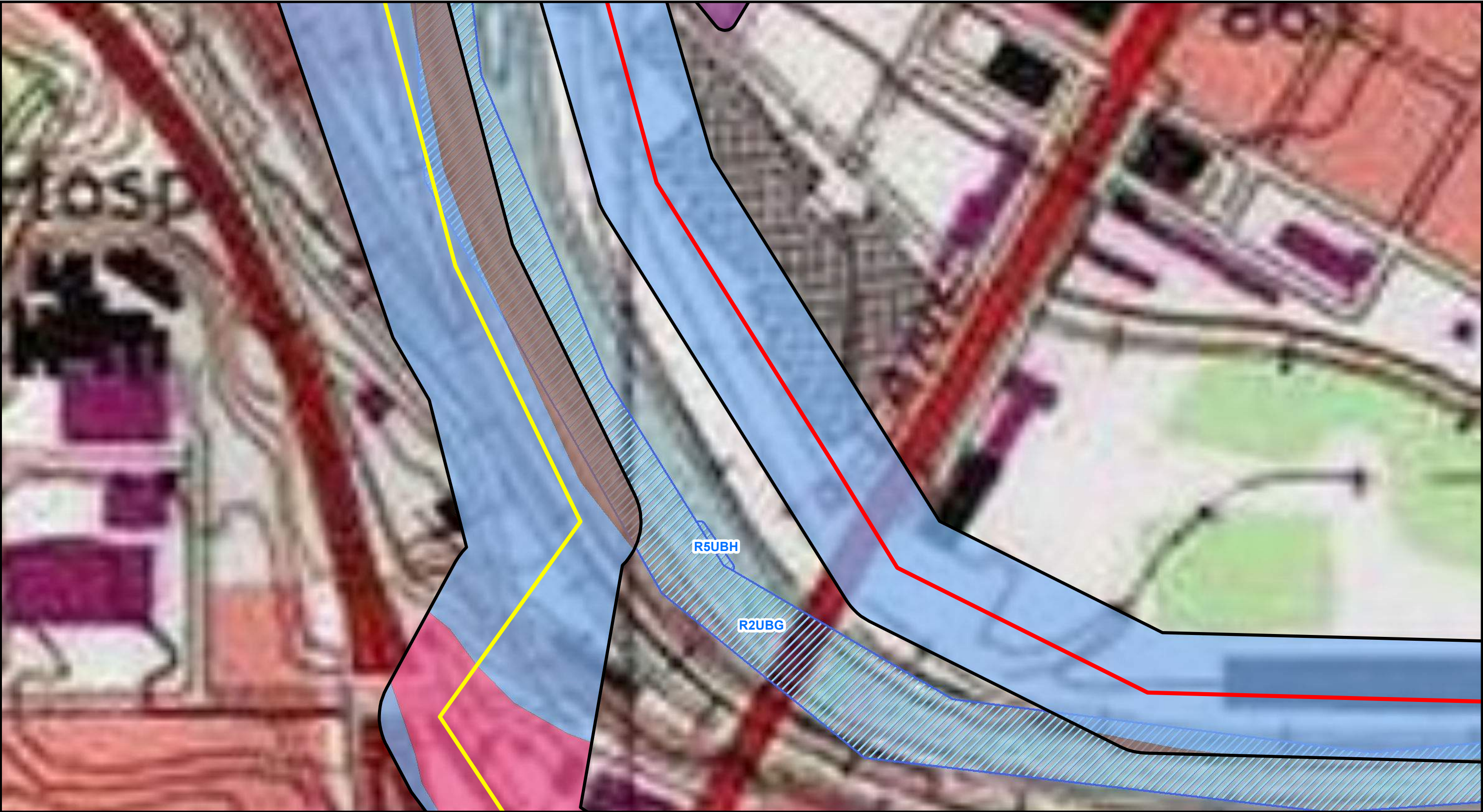
**ATSI** Lincoln Park-Riverbend 138kV Transmission Line Project

**FIGURE 2**  
SHEET 2 of 22  
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60595883 **AECOM**



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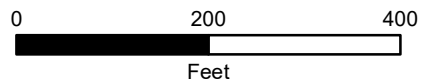
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Survey Boundary  
National Wetland Inventory (NWI)

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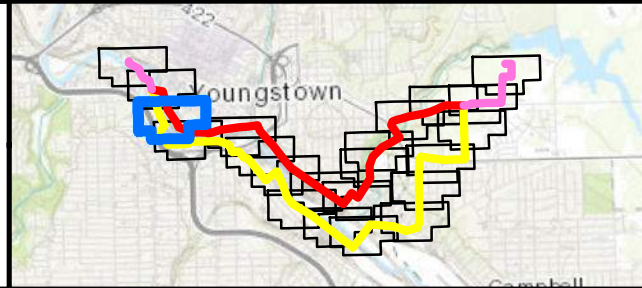
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	CoC	LdE2	W
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	FcB	RuB	Wc
	FhB	Sb	

**Lincoln Park-Riverbend 138 kV Transmission Line**

Alternate Route  
Common Route  
Preferred Route



BASE MAP SOURCE:  
ArcGIS Online, USA Topo Maps



Lincoln Park-Riverbend 138kV  
Transmission Line Project

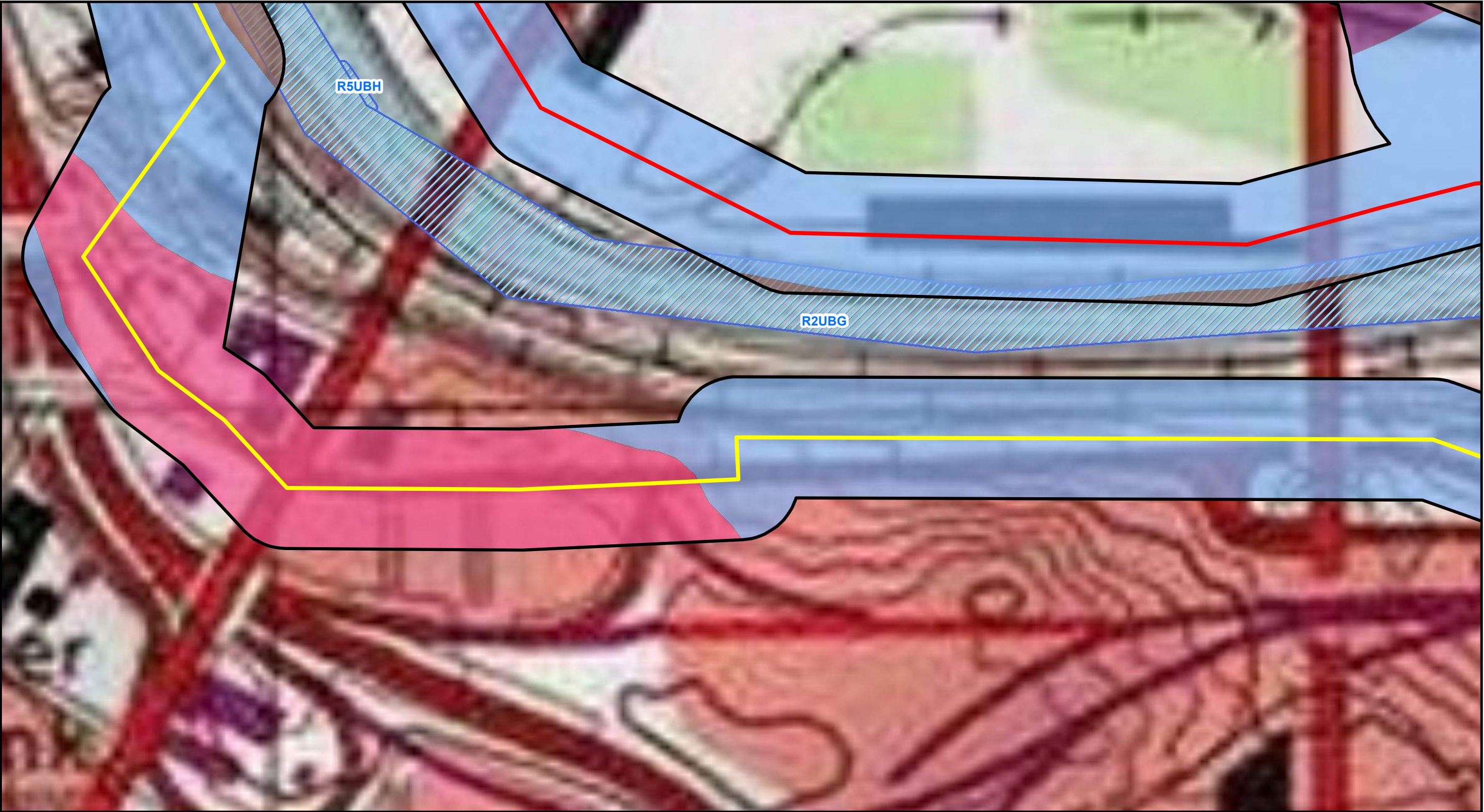
**FIGURE 2**  
SHEET 3 of 22  
SOIL MAP UNIT AND NATIONAL  
WETLAND INVENTORY MAP

JOB NO. 60595883





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**LEGEND**

Existing Substation  
Survey Boundary  
National Wetland Inventory (NWI)

**MUSYM**

BgB	CID	JtB	Se
BtB	CmC	JuB	Sg
Ck	CoB	Lc	Ua
	CoC	LdE2	W
	DkF	RaB	WbB
	FcB	RuB	Wc
	FhB	Sb	

**Lincoln Park-Riverbend 138 kV Transmission Line**

Alternate Route  
Common Route  
Preferred Route

0 200 400  
Feet

BASE MAP SOURCE:  
ArcGIS Online, USA Topo Maps

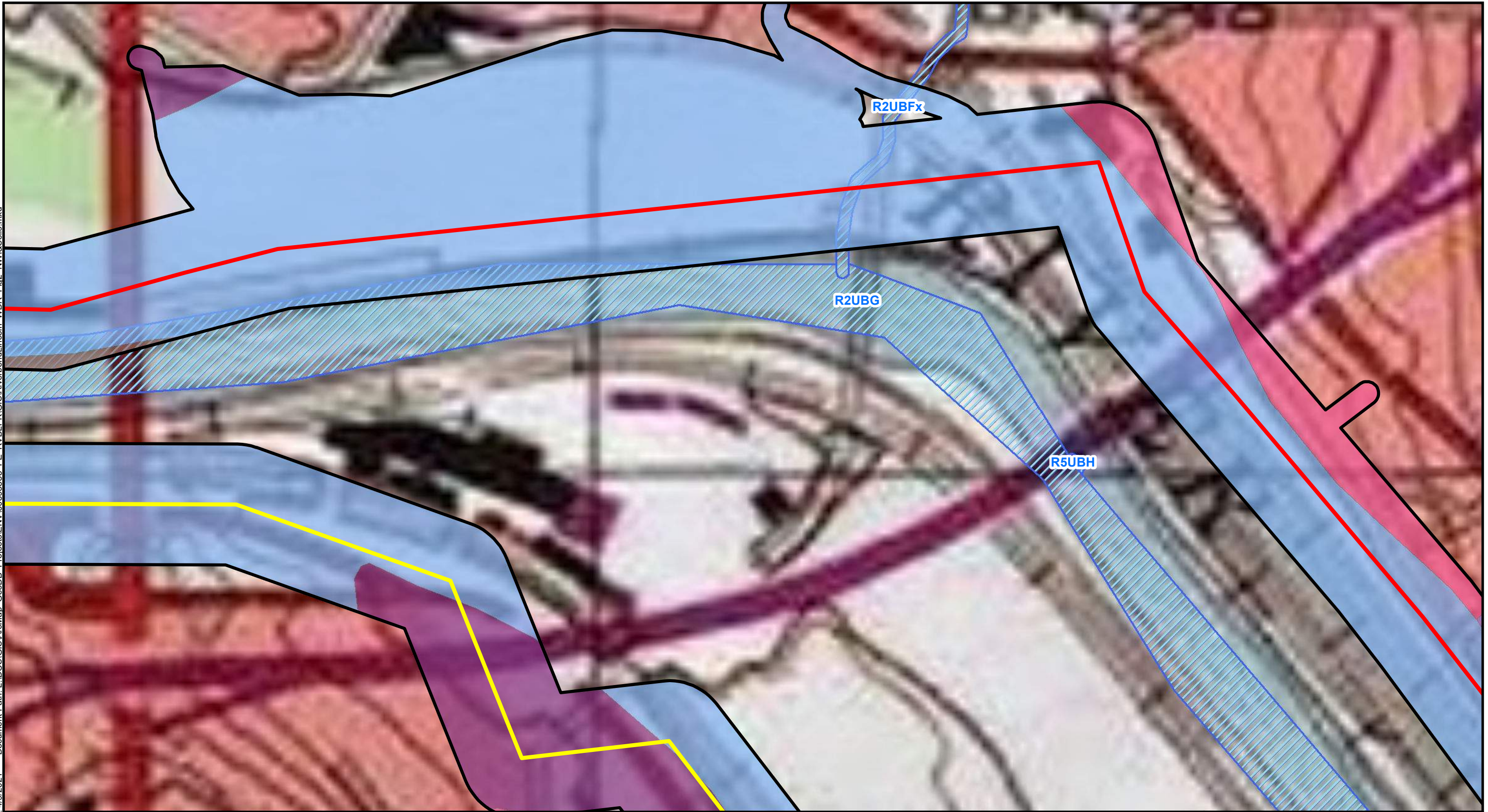
**ATSI** Lincoln Park-Riverbend 138kV Transmission Line Project

**FIGURE 2**  
SHEET 4 of 22  
SOIL MAP UNIT AND NATIONAL  
WETLAND INVENTORY MAP

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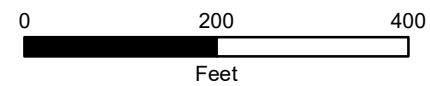
Existing Substation  
Survey Boundary  
National Wetland Inventory (NWI)

**MUSYM**

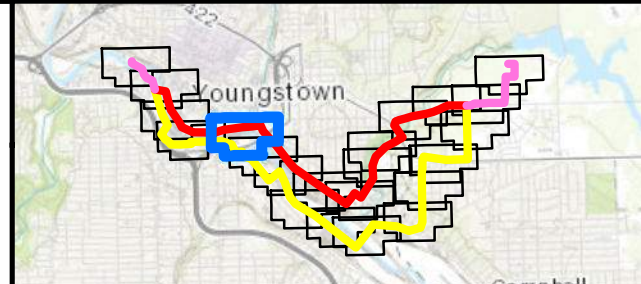
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Ck	CoB	Lc	Ua
	CoC	LdE2	W
	DkF	RaB	WbB
	FcB	RuB	Wc
	FhB	Sb	

**Lincoln Park-Riverbend 138 kV Transmission Line**

Alternate Route  
Common Route  
Preferred Route



BASE MAP SOURCE:  
ArcGIS Online, USA Topo Maps



Lincoln Park-Riverbend 138kV  
Transmission Line Project

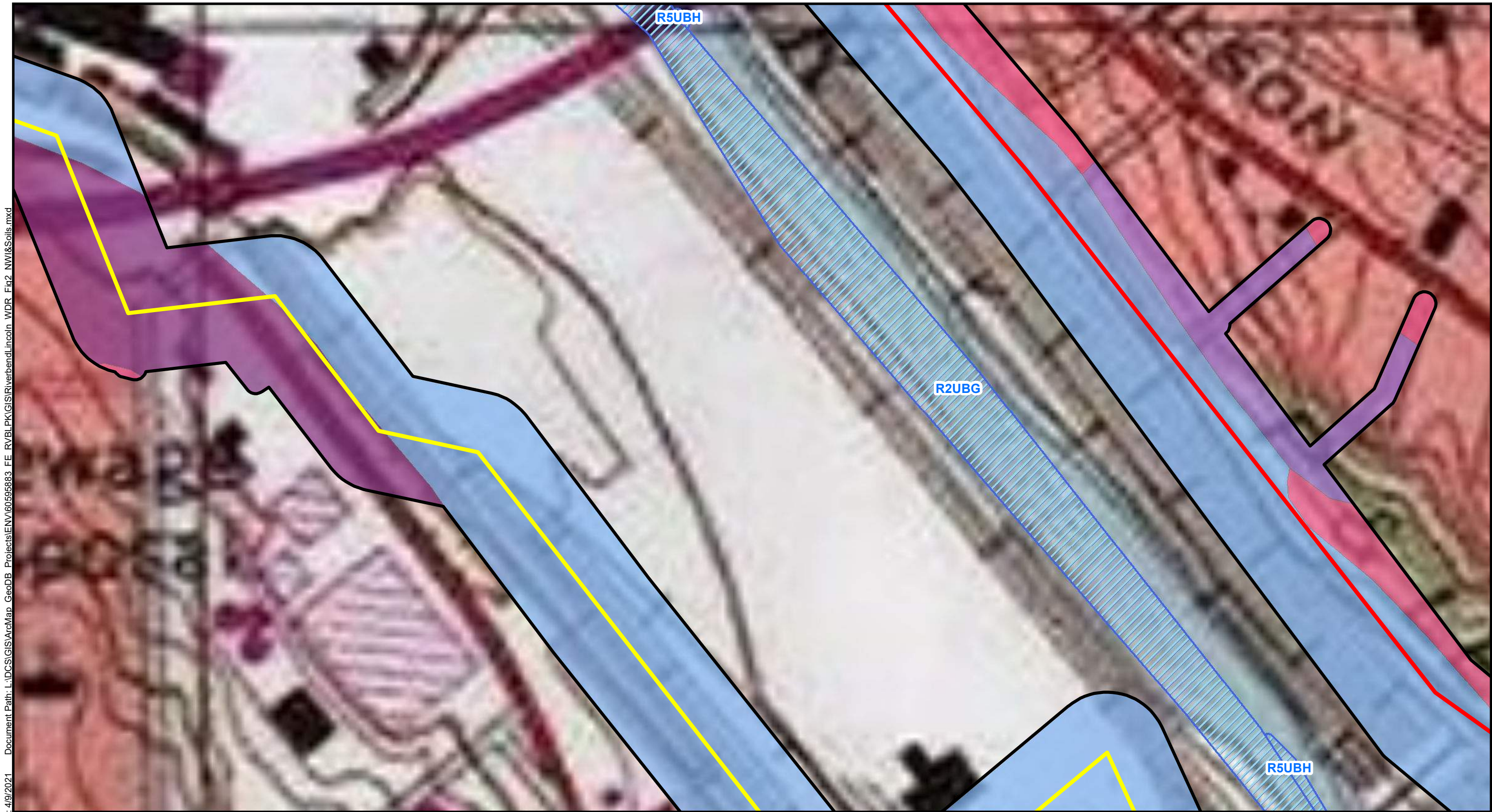
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SHEET 5 of 22  
SOIL MAP UNIT AND NATIONAL  
WETLAND INVENTORY MAP

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**LEGEND**

- Existing Substation
- Survey Boundary
- National Wetland Inventory (NWI)

**MUSYM**

BgB	CID	JtB	Se
BtB	CmC	JuB	Sg
Ck	CoB	Lc	Ua
	CoC	LdE2	W
	DkF	RaB	WbB
	FcB	RuB	Wc
	FhB	Sb	

**Lincoln Park-Riverbend 138 kV Transmission Line**

- Alternate Route
- Common Route
- Preferred Route

0 200 400  
Feet

BASE MAP SOURCE:  
ArcGIS Online, USA Topo Maps

**ATSI**

Lincoln Park-Riverbend 138kV  
Transmission Line Project

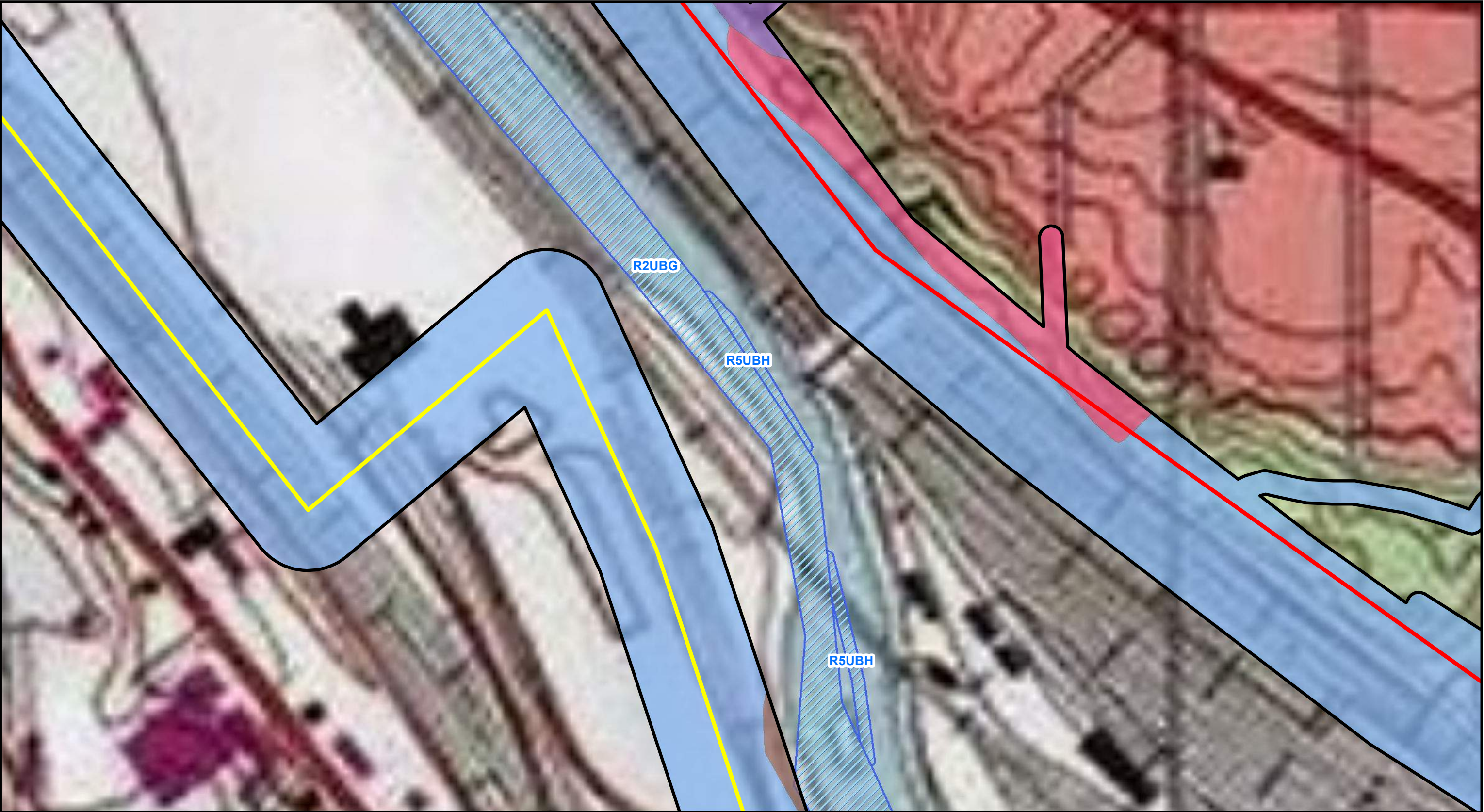
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SHEET 6 of 22  
SOIL MAP UNIT AND NATIONAL  
WETLAND INVENTORY MAP

JOB NO. 60595883

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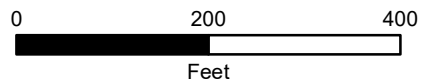
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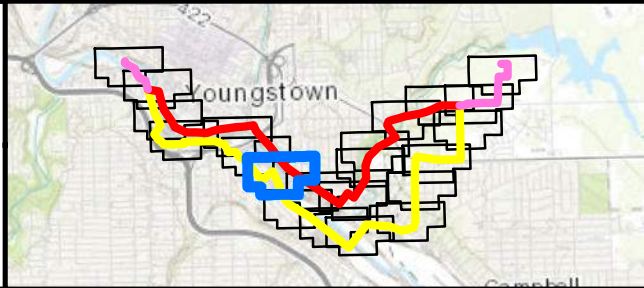
**LEGEND**

Existing Substation	CID	JtB	Se	<b>Lincoln Park-Riverbend 138 kV Transmission Line</b>
Survey Boundary	CmC	JuB	Sg	
National Wetland Inventory (NWI)	CoB	Lc	Ua	
<b>MUSYM</b>	CoC	LdE2	W	
BgB	DkF	RaB	WbB	
BtB	FcB	RuB	Wc	
Ck	FhB	Sb		

Alternate Route  
Common Route  
Preferred Route



BASE MAP SOURCE:  
ArcGIS Online, USA Topo Maps



Lincoln Park-Riverbend 138kV  
Transmission Line Project

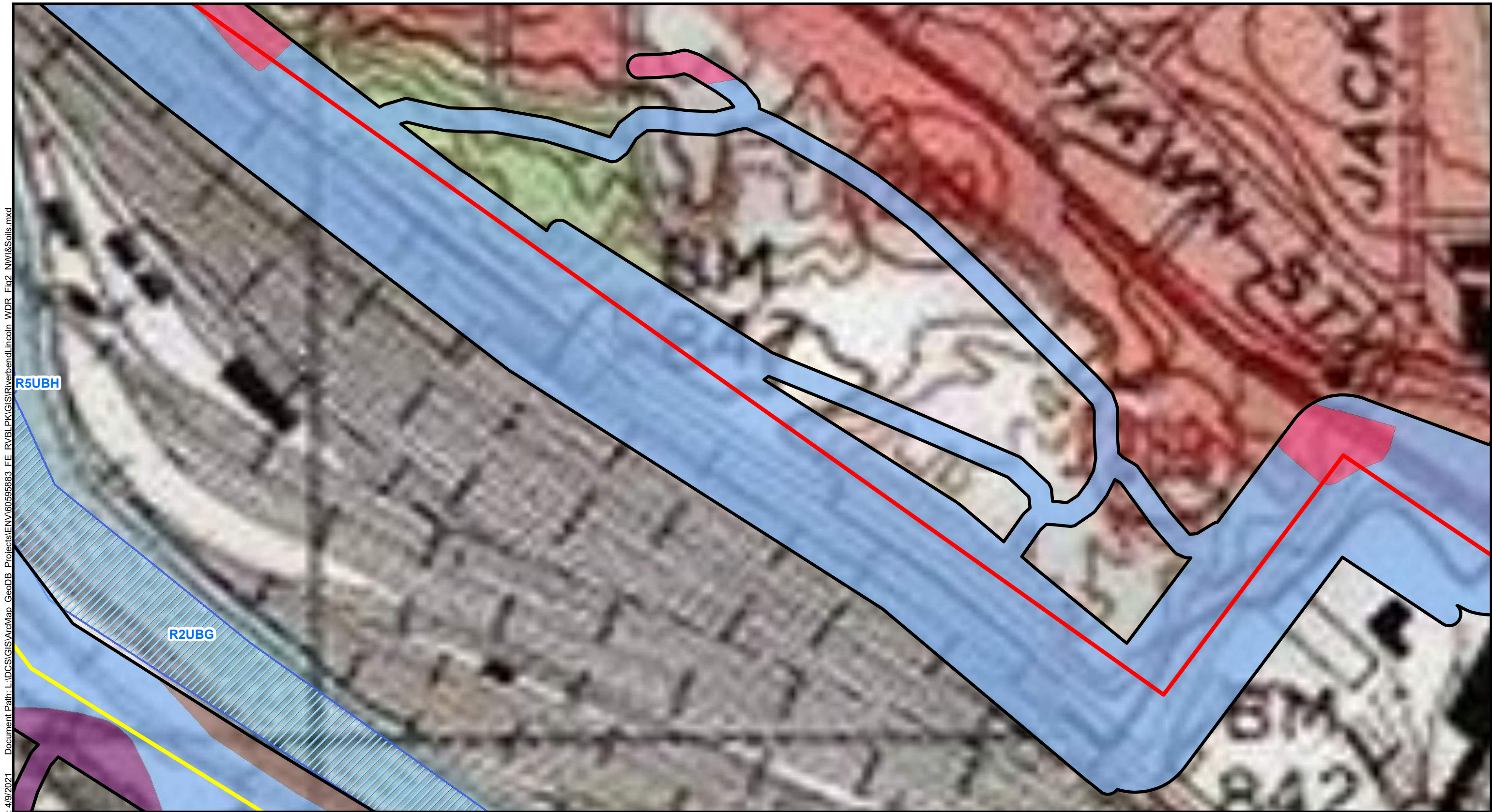
**FIGURE 2**  
SHEET 7 of 22  
SOIL MAP UNIT AND NATIONAL  
WETLAND INVENTORY MAP

JOB NO. 60595883





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**LEGEND**

Existing Substation

Survey Boundary

National Wetland Inventory (NWI)

**MUSYM**

BgB	CID	JtB	Se
BtB	CmC	JuB	Sg
Ck	CoB	Lc	Ua
	CoC	LdE2	W
	DkF	RaB	WbB
	FcB	RuB	Wc
	FhB	Sb	

**Lincoln Park-Riverbend 138 kV Transmission Line**

Alternate Route

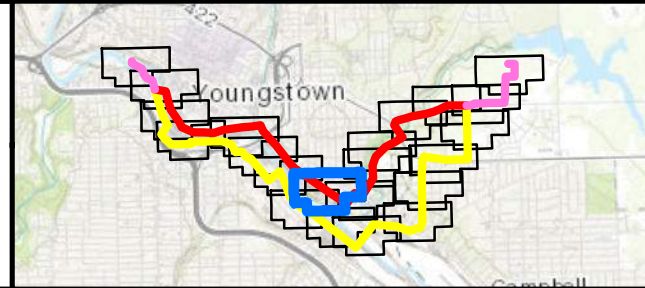
Common Route

Preferred Route

0 200 400

Feet

BASE MAP SOURCE:  
ArcGIS Online, USA Topo Maps



**ATSI**

Lincoln Park-Riverbend 138kV Transmission Line Project

**FIGURE 2**

SHEET 8 of 22

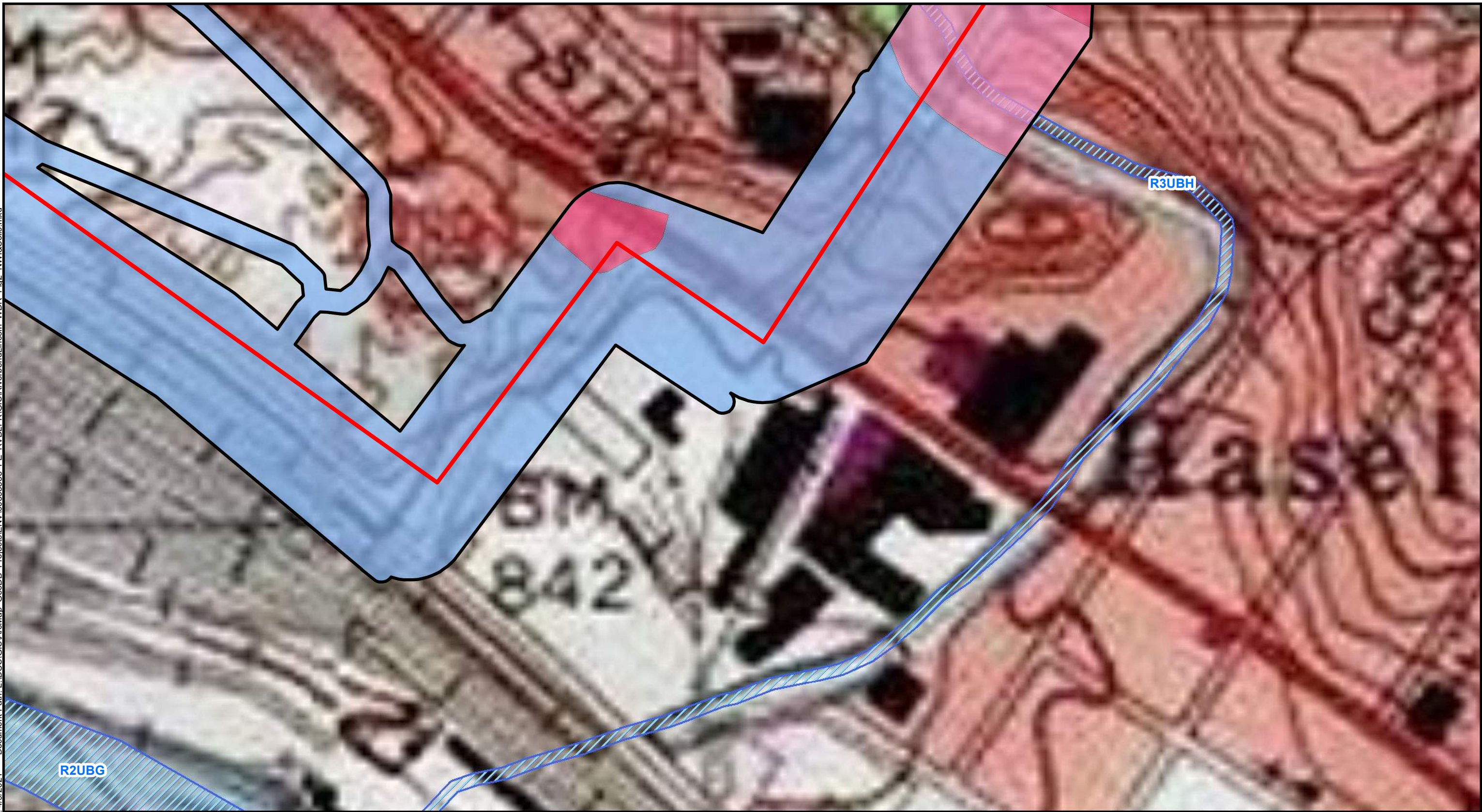
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60595883

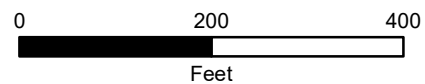
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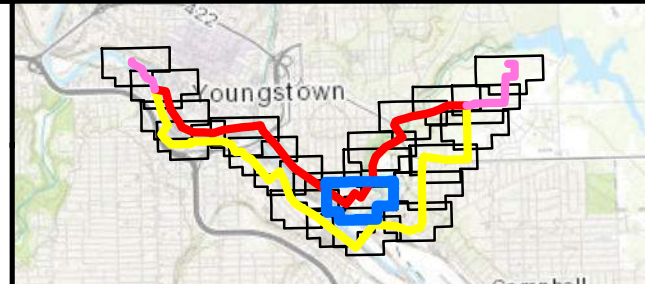
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LEGEND									
<b>Lincoln Park-Riverbend 138 kV Transmission Line</b>									
<b>MUSYM</b>									
<b>Soil Map Units</b>									
Existing Substation	CID	JtB	Se	Alternate Route	CmC	JuB	Sg	Common Route	CoB
Survey Boundary	CoC	Lc	Ua	Preferred Route	DkF	RaB	WbB		FcB
National Wetland Inventory (NWI)	FhB	Sb							
BgB									
BtB									
Ck									



BASE MAP SOURCE:  
ArcGIS Online, USA Topo Maps



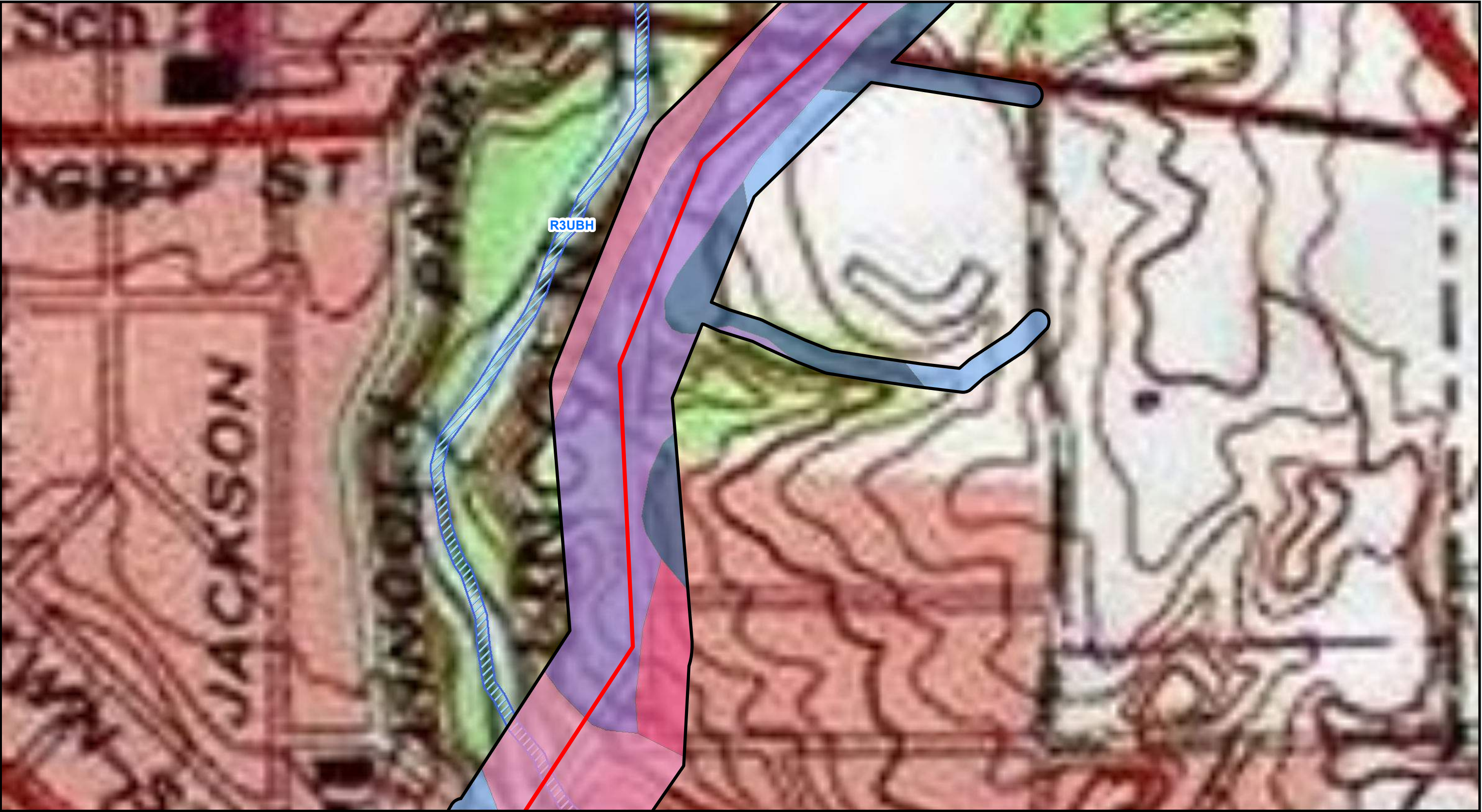
Lincoln Park-Riverbend 138kV  
Transmission Line Project

FIGURE 2  
SHEET 9 of 22  
SOIL MAP UNIT AND NATIONAL  
WETLAND INVENTORY MAP

JOB NO. 60595883







**LEGEND**

Existing Substation  
Survey Boundary  
National Wetland Inventory (NWI)

**MUSYM**

BgB	CID	JtB	Se
BtB	CmC	JuB	Sg
Ck	CoB	Lc	Ua
	CoC	LdE2	W
	DkF	RaB	WbB
	FcB	RuB	Wc
	FhB	Sb	

**Lincoln Park-Riverbend 138 kV Transmission Line**

Alternate Route  
Common Route  
Preferred Route

0 200 400 Feet

BASE MAP SOURCE:  
ArcGIS Online, USA Topo Maps

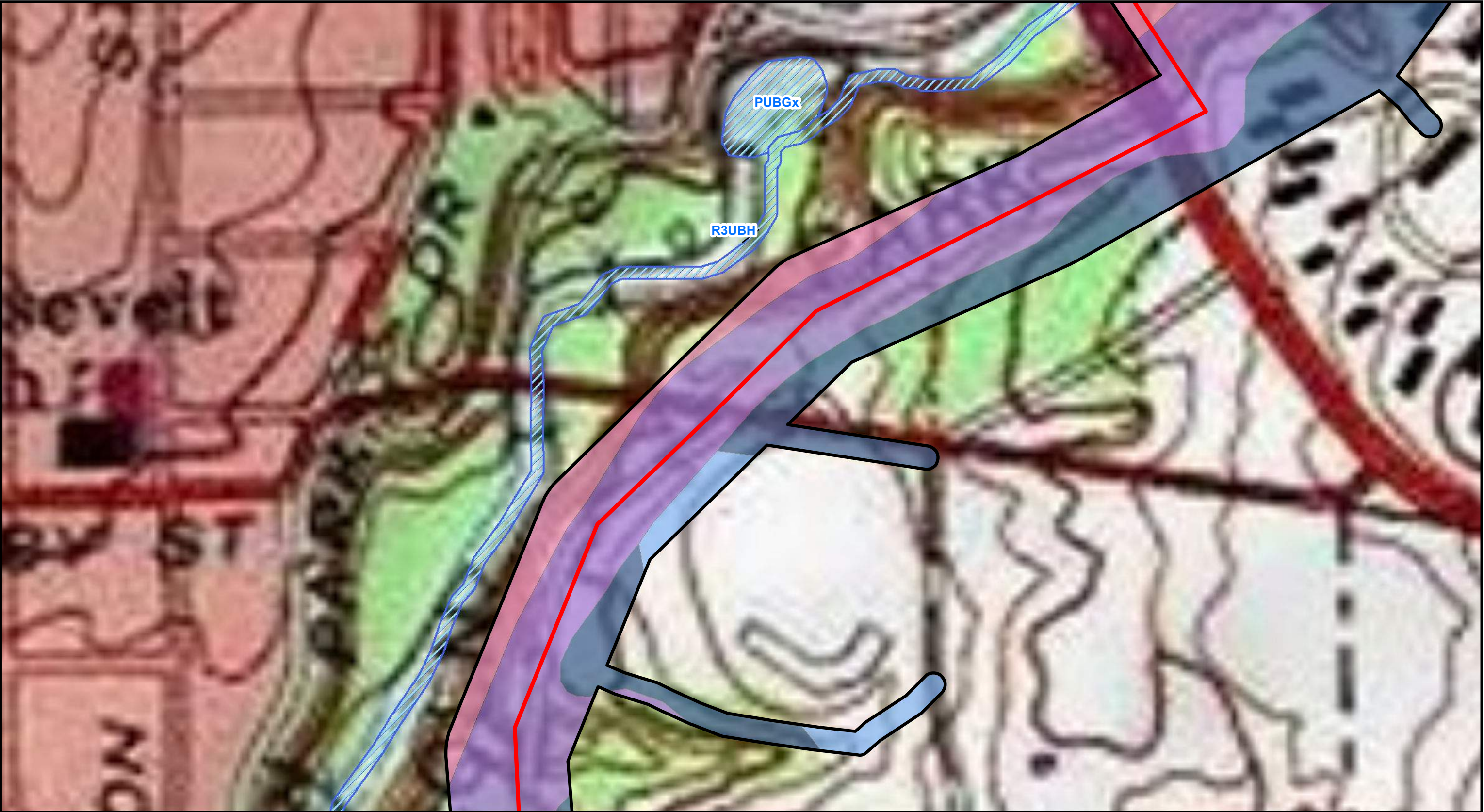
**ATSI** Lincoln Park-Riverbend 138kV Transmission Line Project

**FIGURE 2**  
SHEET 10 of 22  
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60595883 **AECOM**



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**LEGEND**

Existing Substation

Survey Boundary

National Wetland Inventory (NWI)

**MUSYM**

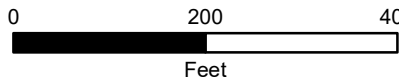
BgB	CID	JtB	Se
BtB	CmC	JuB	Sg
Ck	CoB	Lc	Ua
	CoC	LdE2	W
	DkF	RaB	WbB
	FcB	RuB	Wc
	FhB	Sb	

**Lincoln Park-Riverbend 138 kV Transmission Line**

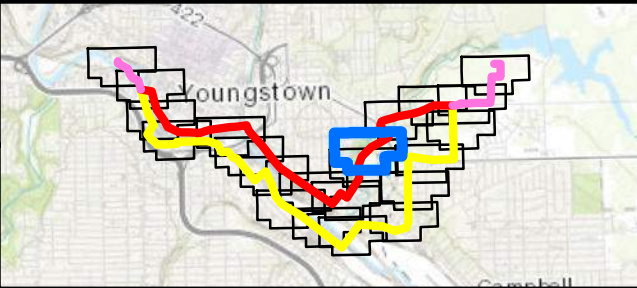
Alternate Route

Common Route

Preferred Route



BASE MAP SOURCE:  
ArcGIS Online, USA Topo Maps



Lincoln Park-Riverbend 138kV  
Transmission Line Project

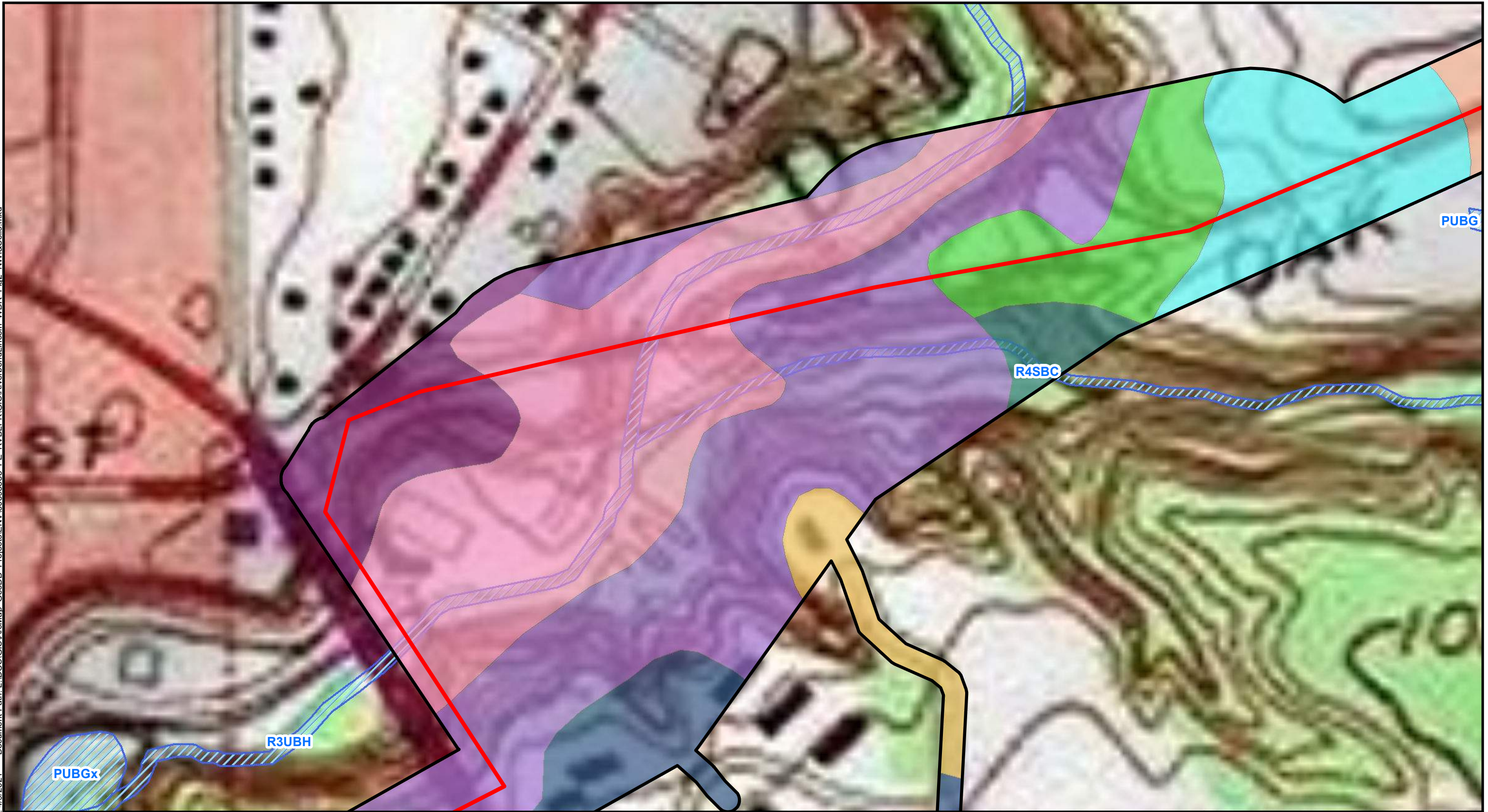
FIGURE 2  
SHEET 11 of 22  
SOIL MAP UNIT AND NATIONAL  
WETLAND INVENTORY MAP

JOB NO. 60595883



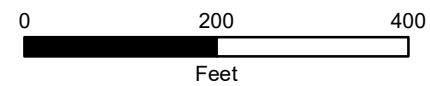


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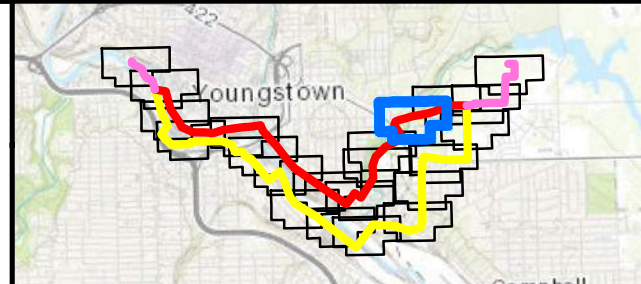


**LEGEND**

Existing Substation	CID	JtB	Se	<b>Lincoln Park-Riverbend 138 kV Transmission Line</b>	
Survey Boundary	CmC	JuB	Sg		
National Wetland Inventory (NWI)	CoB	Lc	Ua		Alternate Route
<b>MUSYM</b>	CoC	LdE2	W		Common Route
BgB	DkF	RaB	WbB		Preferred Route
BtB	FcB	RuB	Wc		
Ck	FhB	Sb			



BASE MAP SOURCE:  
ArcGIS Online, USA Topo Maps



Lincoln Park-Riverbend 138kV  
Transmission Line Project

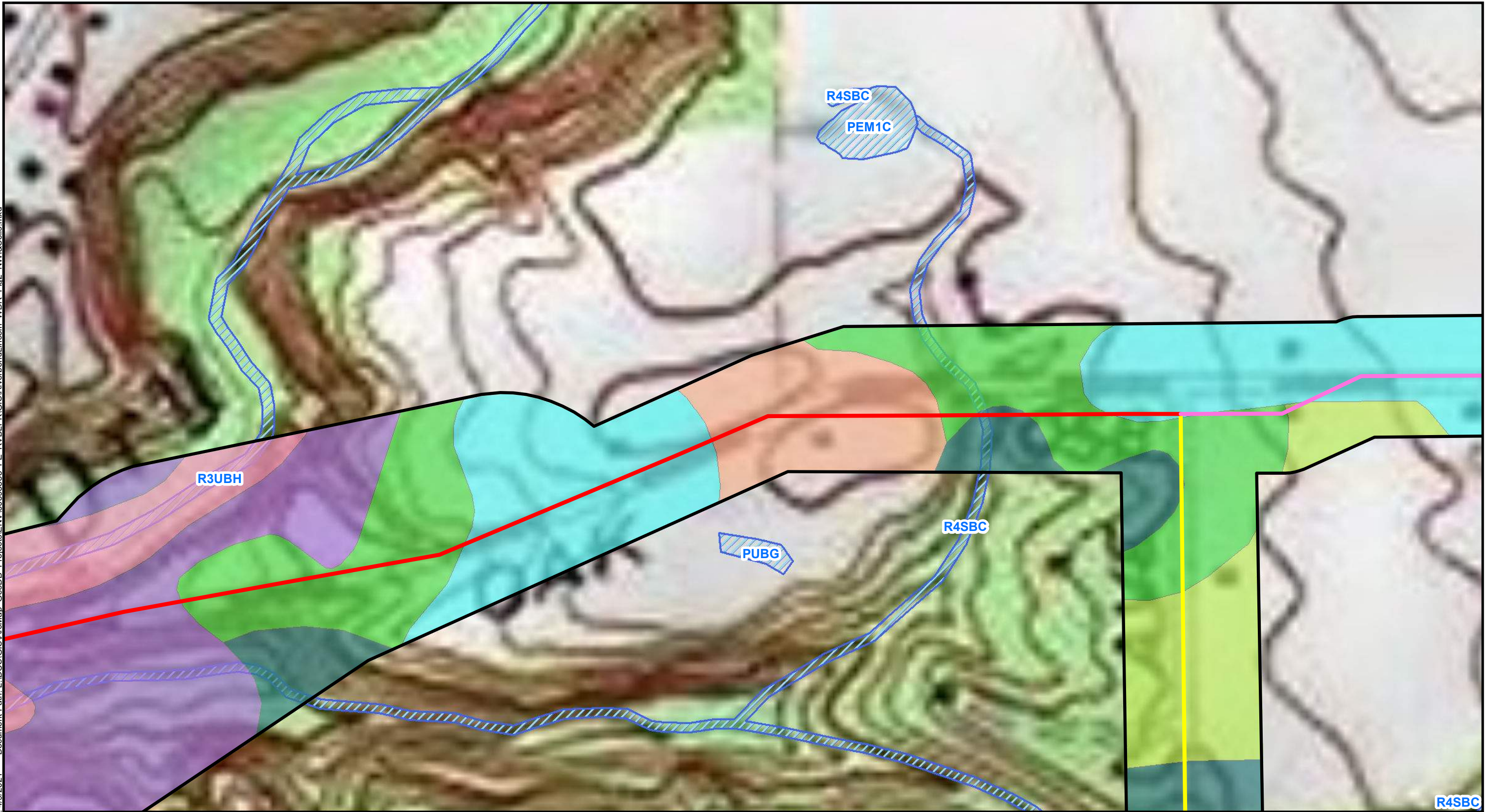
**FIGURE 2**  
SHEET 12 of 22  
SOIL MAP UNIT AND NATIONAL  
WETLAND INVENTORY MAP

JOB NO. 60595883



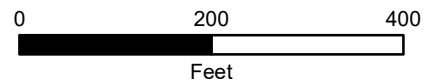


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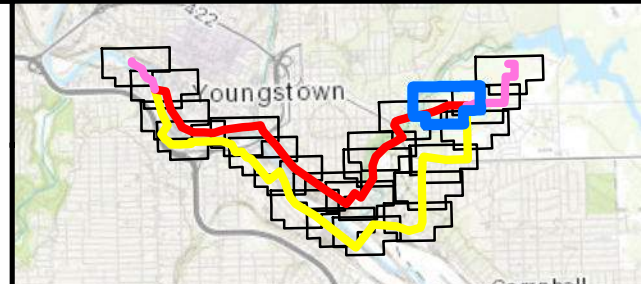


**LEGEND**

Existing Substation	CID	JtB	Se	<b>Lincoln Park-Riverbend 138 kV Transmission Line</b>	
Survey Boundary	CmC	JuB	Sg		
National Wetland Inventory (NWI)	CoB	Lc	Ua		Alternate Route
<b>MUSYM</b>	CoC	LdE2	W		Common Route
BgB	DkF	RaB	WbB		Preferred Route
BtB	FcB	RuB	Wc		
Ck	FhB	Sb			



BASE MAP SOURCE:  
ArcGIS Online, USA Topo Maps



Lincoln Park-Riverbend 138kV  
Transmission Line Project

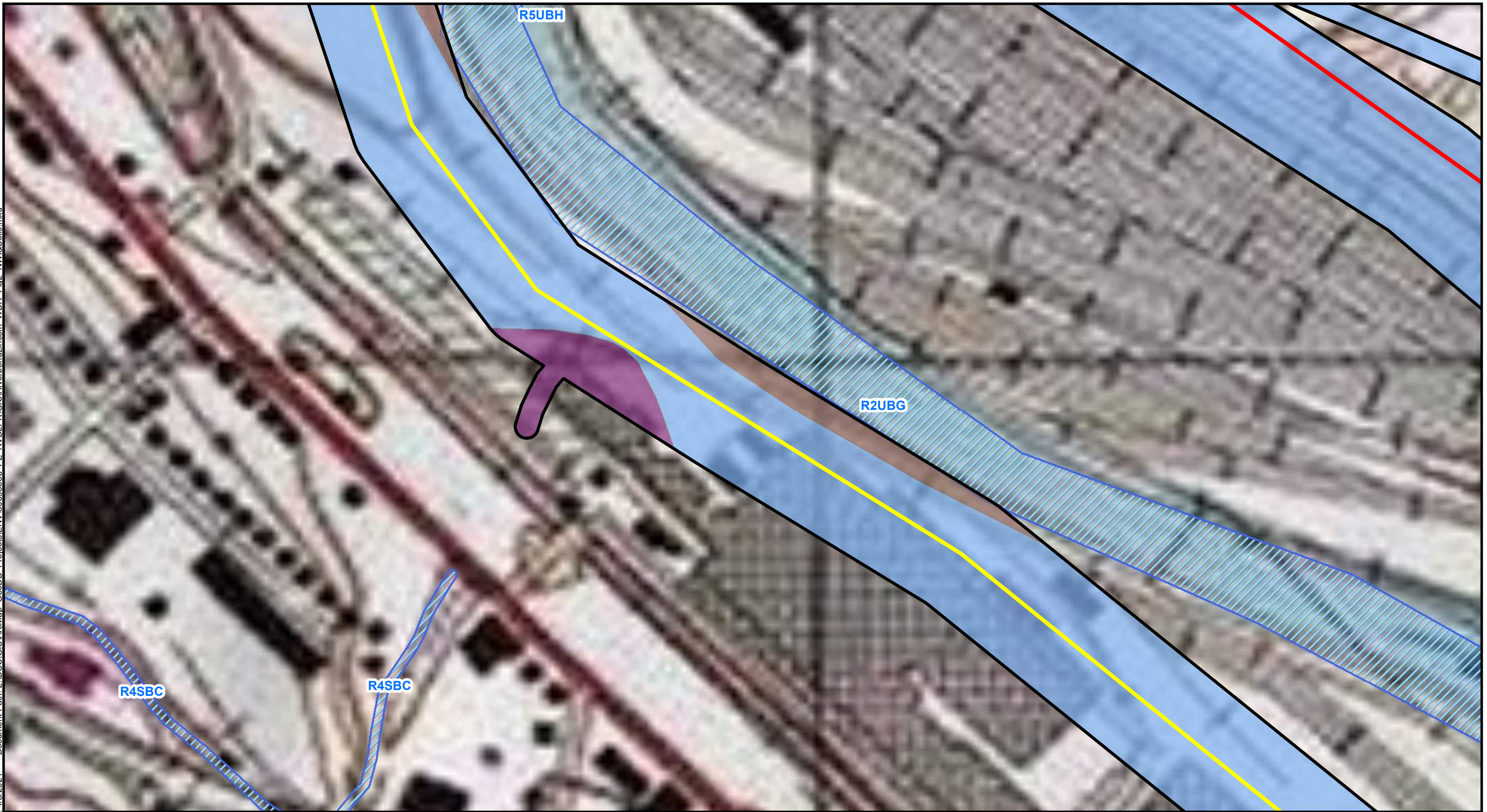
**FIGURE 2**  
SHEET 13 of 22  
SOIL MAP UNIT AND NATIONAL  
WETLAND INVENTORY MAP

JOB NO. 60595883



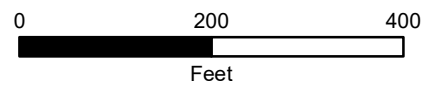


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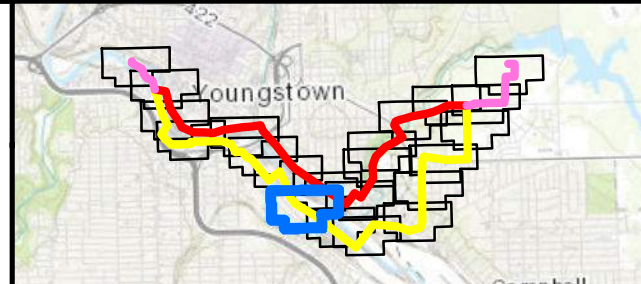


**LEGEND**

Existing Substation	CID	JtB	Se	<b>Lincoln Park-Riverbend 138 kV Transmission Line</b>	
Survey Boundary	CmC	JuB	Sg		
National Wetland Inventory (NWI)	CoB	Lc	Ua		Alternate Route
<b>MUSYM</b>	CoC	LdE2	W		Common Route
BgB	DkF	RaB	WbB		Preferred Route
BtB	FcB	RuB	Wc		
Ck	FhB	Sb			



BASE MAP SOURCE:  
ArcGIS Online, USA Topo Maps



Lincoln Park-Riverbend 138kV  
Transmission Line Project

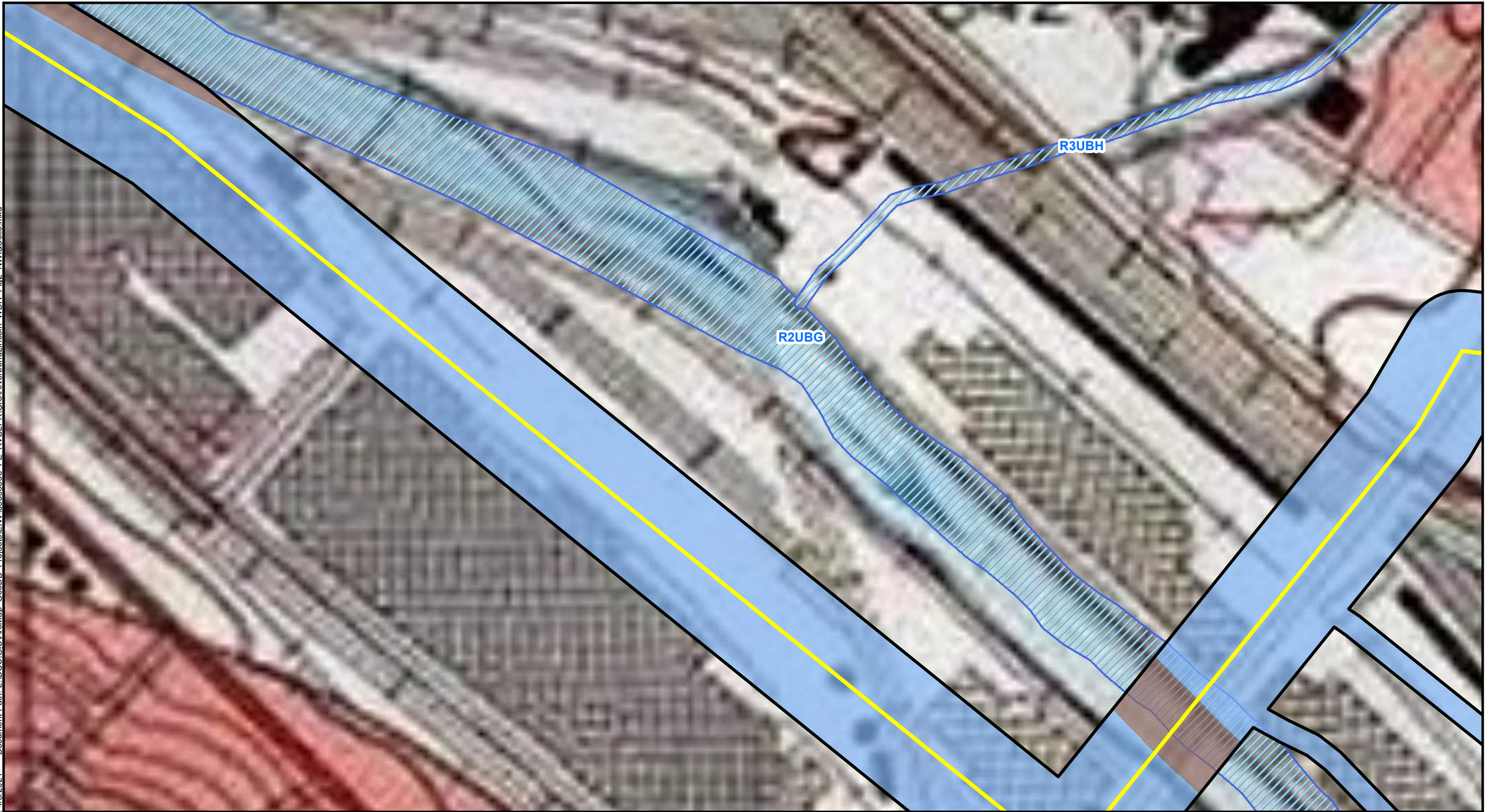
**FIGURE 2**  
SHEET 14 of 22  
SOIL MAP UNIT AND NATIONAL  
WETLAND INVENTORY MAP

JOB NO. 60595883



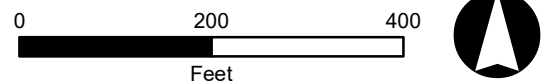


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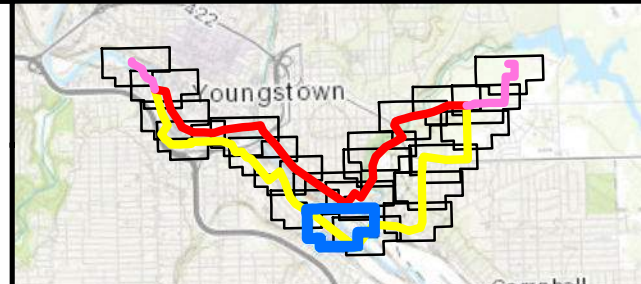


**LEGEND**

Existing Substation	CID	JtB	Se	<b>Lincoln Park-Riverbend 138 kV Transmission Line</b>
Survey Boundary	CmC	JuB	Sg	
National Wetland Inventory (NWI)	CoB	Lc	Ua	
	CoC	LdE2	W	
<b>MUSYM</b>	DkF	RaB	WbB	Alternate Route
BgB	FcB	RuB	Wc	Common Route
BtB	FhB	Sb		Preferred Route
Ck				



BASE MAP SOURCE:  
ArcGIS Online, USA Topo Maps



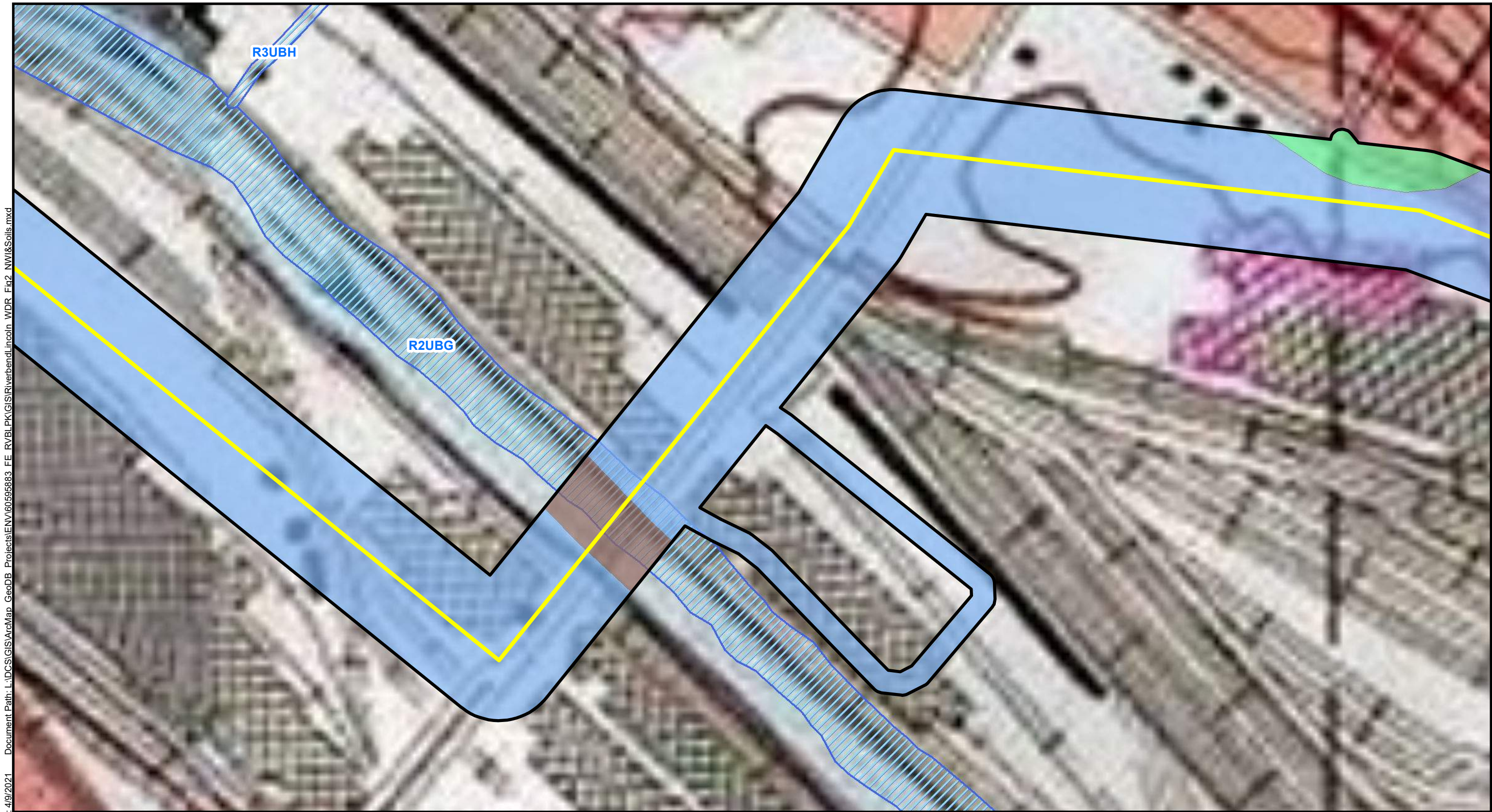
**ATSI** Lincoln Park-Riverbend 138kV Transmission Line Project

**FIGURE 2**  
SHEET 15 of 22  
SOIL MAP UNIT AND NATIONAL  
WETLAND INVENTORY MAP

JOB NO. 60595883 **AECOM**



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LEGEND									
Existing Substation	CID	JtB	Se	<b>Lincoln Park-Riverbend 138 kV Transmission Line</b>	0	200	400		
Survey Boundary	CmC	JuB	Sg		Feet				
National Wetland Inventory (NWI)	CoB	Lc	Ua		Alternate Route	Common Route	Preferred Route		
<b>MUSYM</b>	CoC	LdE2	W						
BgB	DkF	RaB	WbB						
BtB	FcB	RuB	Wc						
Ck	FhB	Sb							

BASE MAP SOURCE:  
ArcGIS Online, USA Topo Maps

**ATSI** Lincoln Park-Riverbend 138kV Transmission Line Project

**FIGURE 2**  
SHEET 16 of 22  
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60595883 **AECOM**





**LEGEND**

- Existing Substation
- Survey Boundary
- National Wetland Inventory (NWI)

**MUSYM**

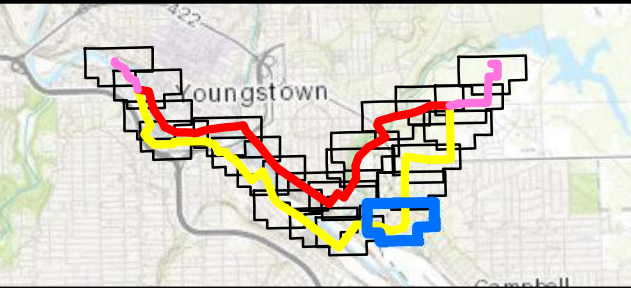
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BtB	CmC	JuB	Sg
Ck	CoB	Lc	Ua
	CoC	LdE2	W
	DkF	RaB	WbB
	FcB	RuB	Wc
	FhB	Sb	

**Lincoln Park-Riverbend 138 kV Transmission Line**

- Alternate Route
- Common Route
- Preferred Route

0 200 400  
Feet

BASE MAP SOURCE:  
ArcGIS Online, USA Topo Maps



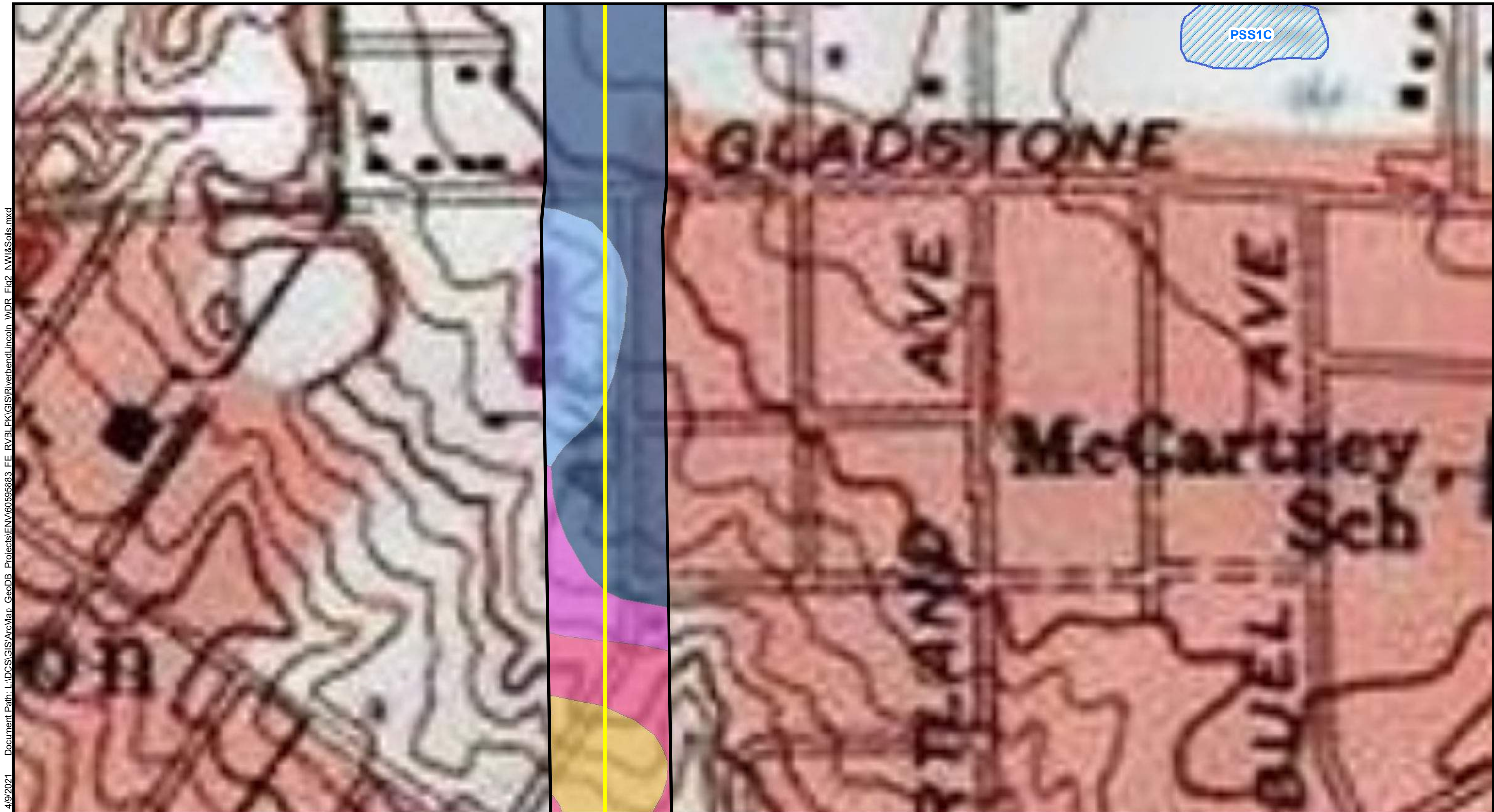
**ATSI** Lincoln Park-Riverbend 138kV Transmission Line Project

**FIGURE 2**  
SHEET 17 of 22  
SOIL MAP UNIT AND NATIONAL  
WETLAND INVENTORY MAP

JOB NO. 60595883

**AECOM**





**LEGEND**

Existing Substation

Survey Boundary

National Wetland Inventory (NWI)

**MUSYM**

BgB	CID	JtB	Se
BtB	CmC	JuB	Sg
Ck	CoB	Lc	Ua
	CoC	LdE2	W
	DkF	RaB	WbB
	FcB	RuB	Wc
	FhB	Sb	

**Lincoln Park-Riverbend 138 kV Transmission Line**

Alternate Route

Common Route

Preferred Route

0 200 400 Feet

BASE MAP SOURCE:  
ArcGIS Online, USA Topo Maps

**ATSI** Lincoln Park-Riverbend 138kV Transmission Line Project

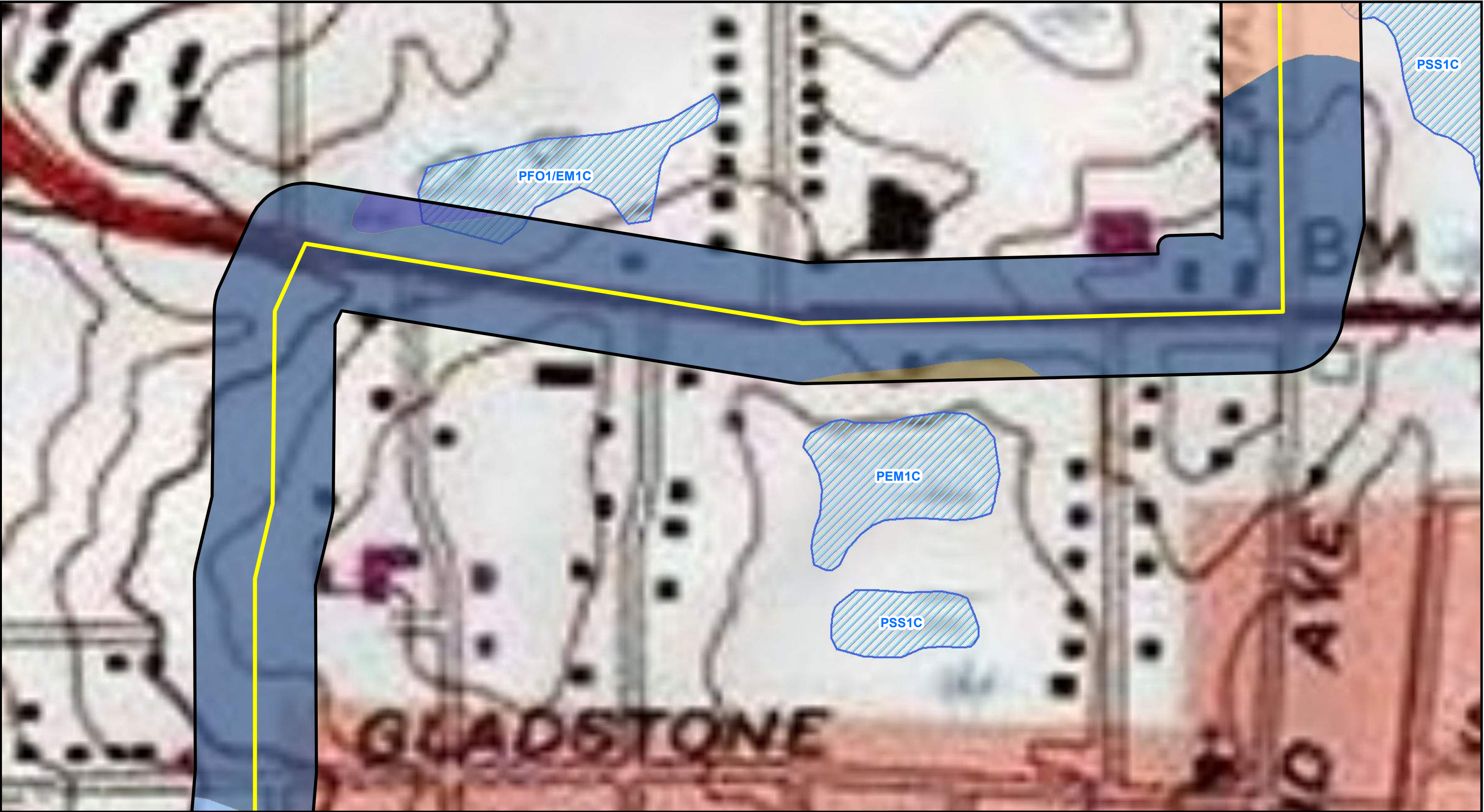
**FIGURE 2**  
SHEET 18 of 22  
SOIL MAP UNIT AND NATIONAL  
WETLAND INVENTORY MAP

JOB NO. 60595883

**AECOM**



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**LEGEND**

Existing Substation  
Survey Boundary  
National Wetland Inventory (NWI)

**MUSYM**

BgB	CID	JtB	Se
BtB	CmC	JuB	Sg
Ck	CoB	Lc	Ua
	CoC	LdE2	W
	DkF	RaB	WbB
	FcB	RuB	Wc
	FhB	Sb	

**Lincoln Park-Riverbend 138 kV Transmission Line**

Alternate Route  
Common Route  
Preferred Route

0 200 400 Feet

BASE MAP SOURCE:  
ArcGIS Online, USA Topo Maps

**ATSI** Lincoln Park-Riverbend 138kV Transmission Line Project

**FIGURE 2**  
SHEET 19 of 22  
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

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**LEGEND**

- Existing Substation
- Survey Boundary
- National Wetland Inventory (NWI)

**MUSYM**

BgB	CID	JtB	Se
BtB	CmC	JuB	Sg
Ck	CoB	Lc	Ua
	CoC	LdE2	W
	DkF	RaB	WbB
	FcB	RuB	Wc
	FhB	Sb	

**Lincoln Park-Riverbend 138 kV Transmission Line**

- Alternate Route
- Common Route
- Preferred Route

0 200 400 Feet

BASE MAP SOURCE:  
ArcGIS Online, USA Topo Maps

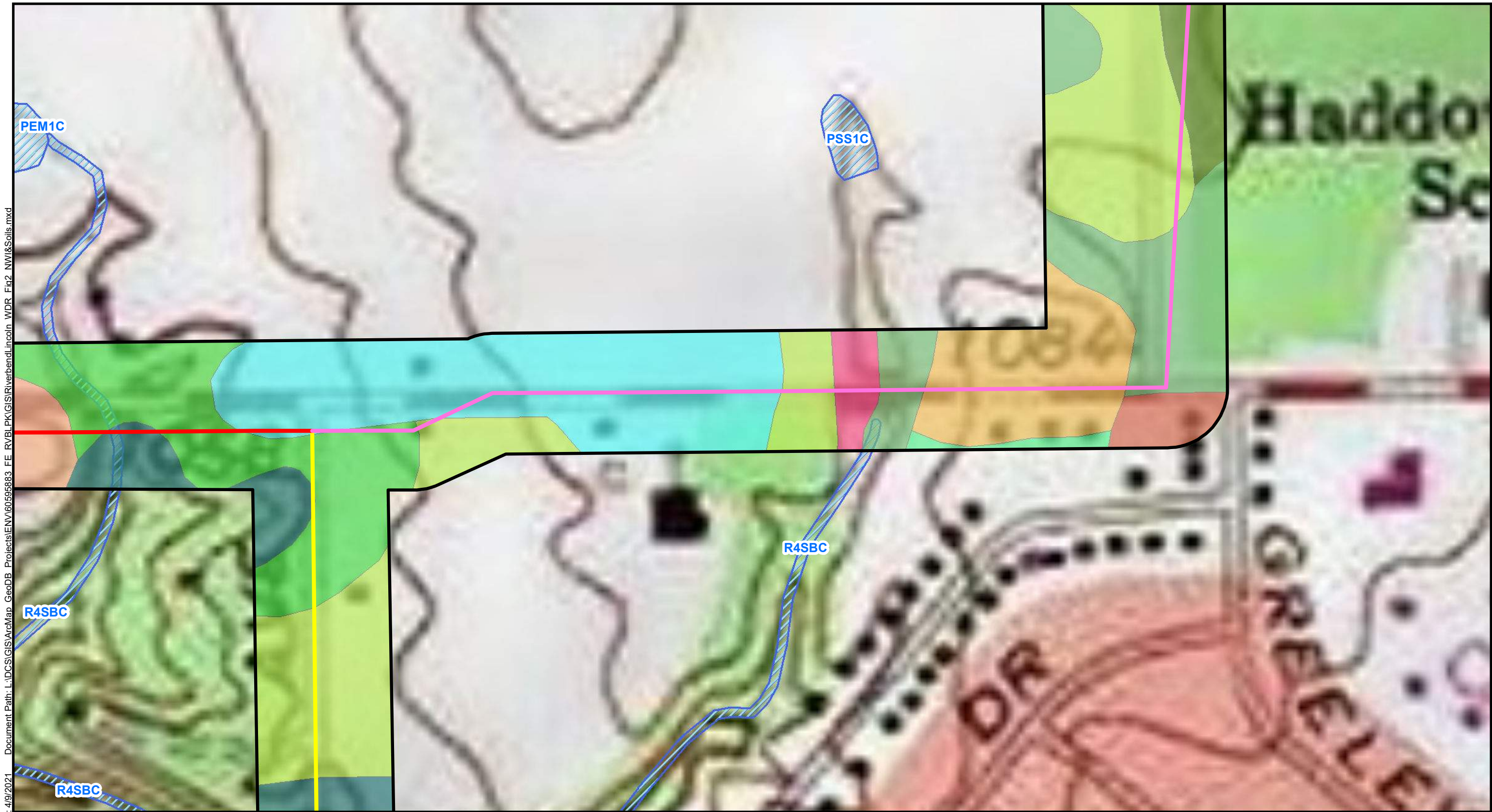
**ATSI** Lincoln Park-Riverbend 138kV Transmission Line Project

**FIGURE 2**  
SHEET 20 of 22  
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60595883 **AECOM**



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Date Saved: 4/9/2021



**LEGEND**

Existing Substation  
Survey Boundary  
National Wetland Inventory (NWI)

**MUSYM**

BgB	CID	JtB	Se
BtB	CmC	JuB	Sg
Ck	CoB	Lc	Ua
	CoC	LdE2	W
	DkF	RaB	WbB
	FcB	RuB	Wc
	FhB	Sb	

**Lincoln Park-Riverbend 138 kV Transmission Line**

Alternate Route  
Common Route  
Preferred Route

0 200 400 Feet

BASE MAP SOURCE:  
ArcGIS Online, USA Topo Maps

**ATSI** Lincoln Park-Riverbend 138kV Transmission Line Project

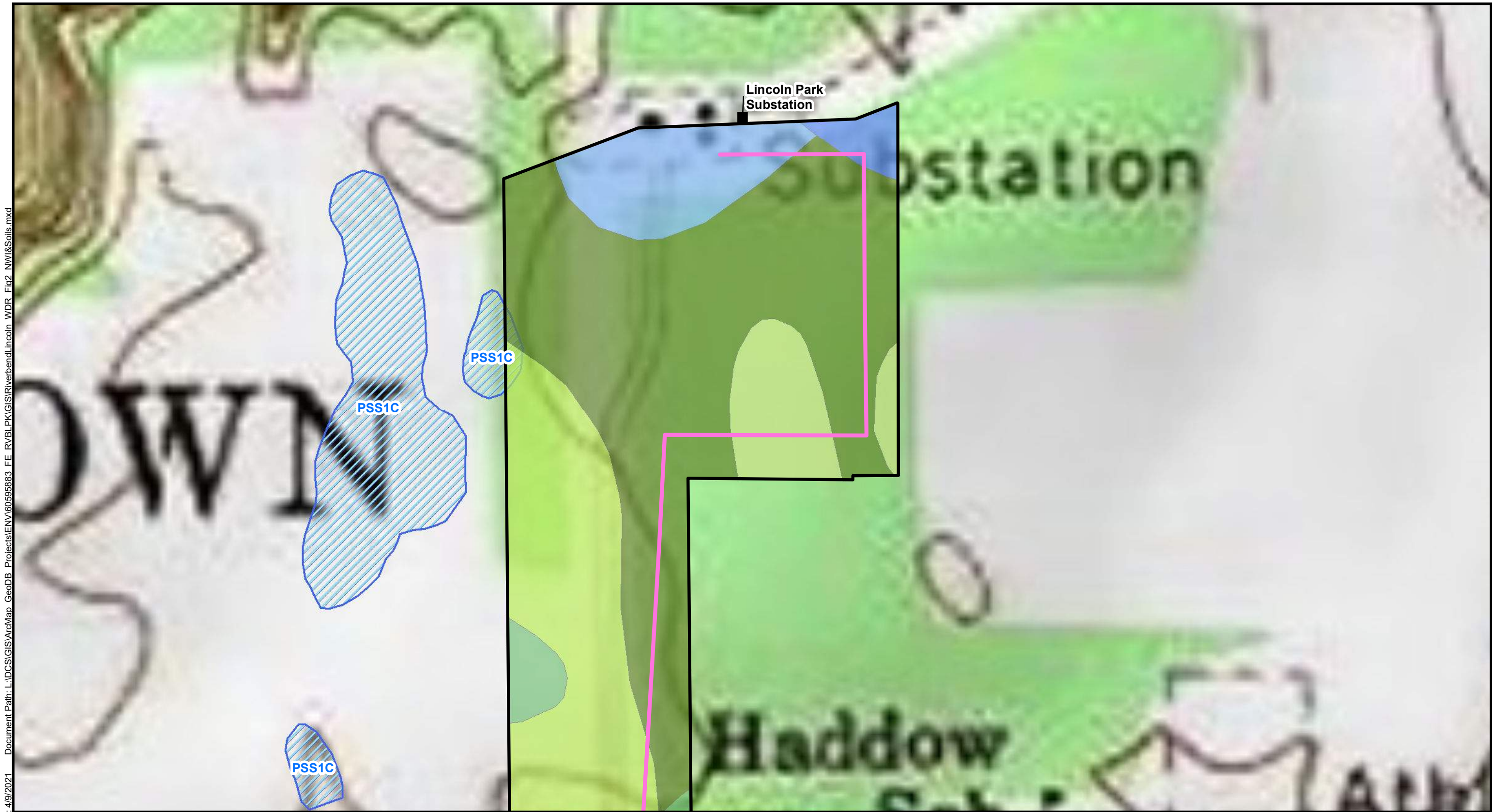
**FIGURE 2**  
SHEET 21 of 22  
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60595883

**AECOM**



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LEGEND									
Existing Substation	CID	JtB	Se	<b>Lincoln Park-Riverbend 138 kV Transmission Line</b>	Alternate Route	Common Route	Preferred Route	 BASE MAP SOURCE: ArcGIS Online, USA Topo Maps	
Survey Boundary	CmC	JuB	Sg						
National Wetland Inventory (NWI)	CoB	Lc	Ua						
	CoC	LdE2	W						
<b>MUSYM</b>	DkF	RaB	WbB						
BgB	FcB	RuB	Wc						
BtB	FhB	Sb							
Ck									

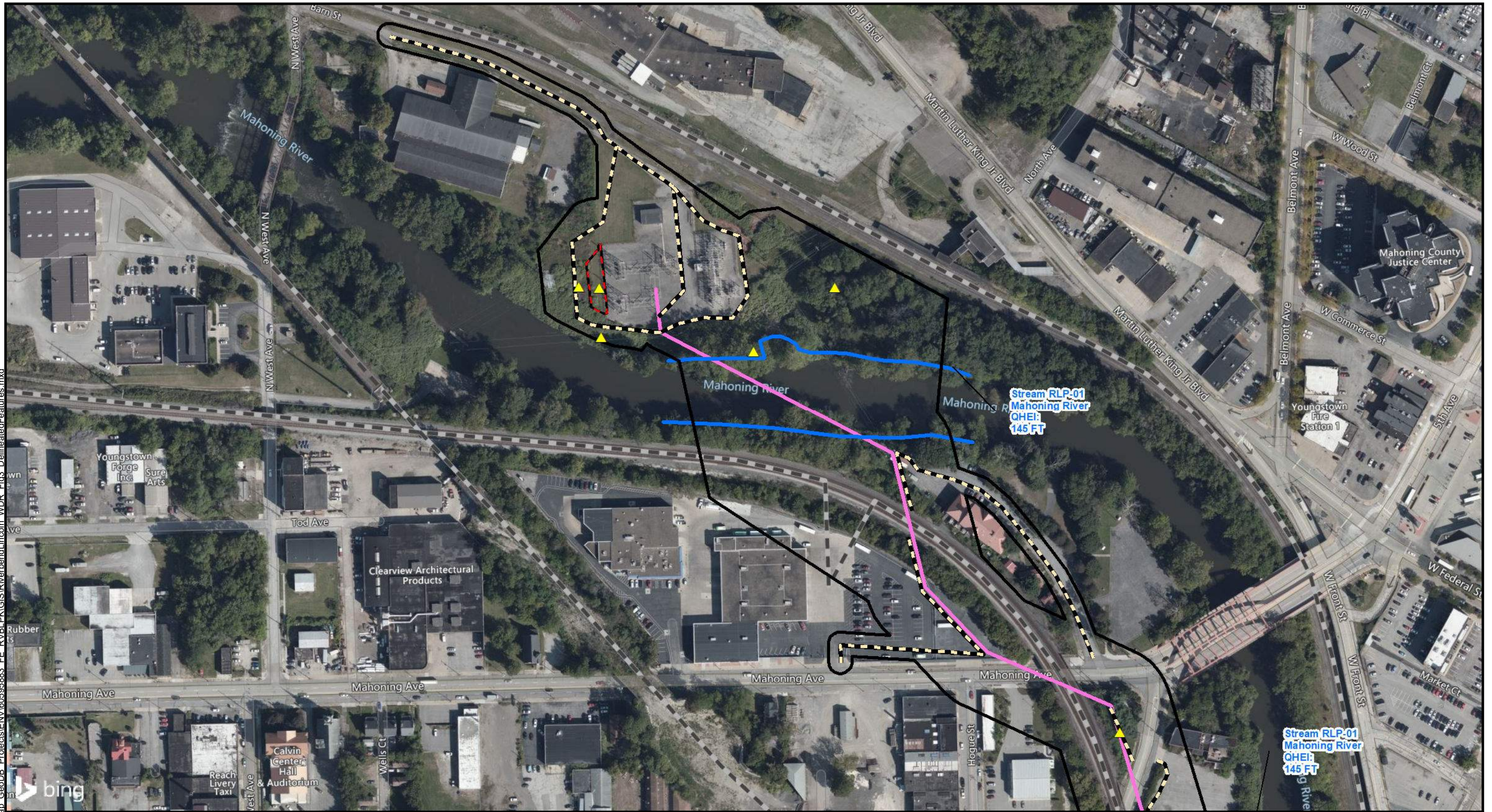
ATSI Lincoln Park-Riverbend 138kV Transmission Line Project

**FIGURE 2**  
SHEET 22 of 22  
SOIL MAP UNIT AND NATIONAL  
WETLAND INVENTORY MAP

JOB NO. 60595883 **AECOM**

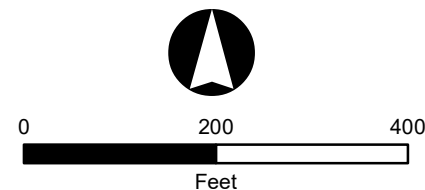


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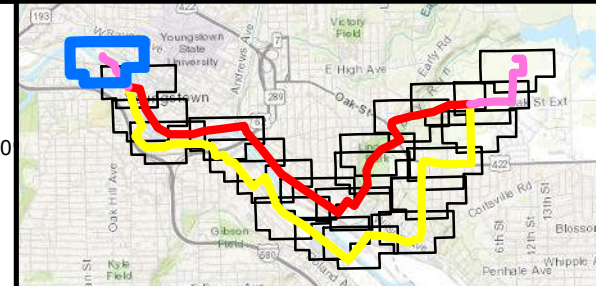


LEGEND

- |                     |   |                    |
|---------------------|---|--------------------|
| Existing Substation | Proposed Riverbend Substation Expansion | Upland Data Point  |
| Alternate Route     | Proposed Access Road                    | Wetland Data Point |
| Common Route        | Delineated Stream (HHEI)                | Railroad           |
| Preferred Route     | Delineated Stream (QHEI)                |                    |
| Survey Boundary     | Delineated Wetland                      |                    |



BASE MAP SOURCE:  
ArcGIS Online, Bing Maps Aerial



Lincoln Park-Riverbend 138kV  
Transmission Line Project

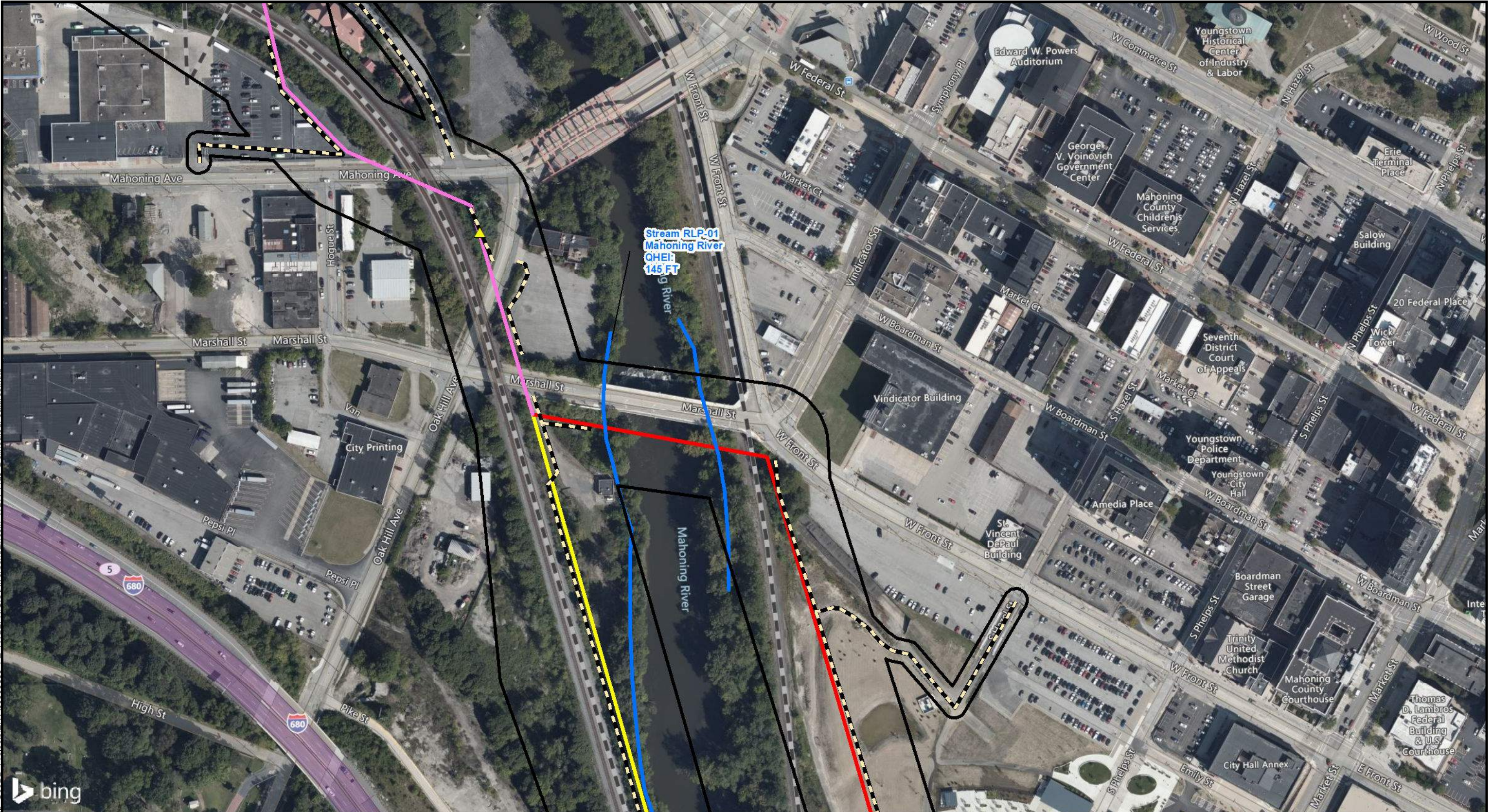
FIGURE 3  
SHEET 1 of 22  
WETLAND DELINEATION AND  
STREAM ASSESSMENT MAP

JOB NO. 60595883





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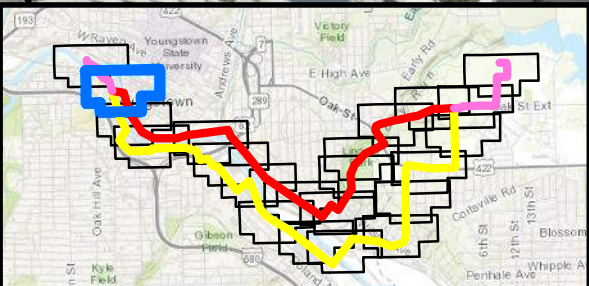


**LEGEND**

Existing Substation	Proposed Riverbend Substation Expansion	Upland Data Point
Alternate Route	Proposed Access Road	Wetland Data Point
Common Route	Delineated Stream (HHEI)	Railroad
Preferred Route	Delineated Stream (QHEI)	
Survey Boundary	Delineated Wetland	

0 200 400  
Feet

BASE MAP SOURCE:  
ArcGIS Online, Bing Maps Aerial



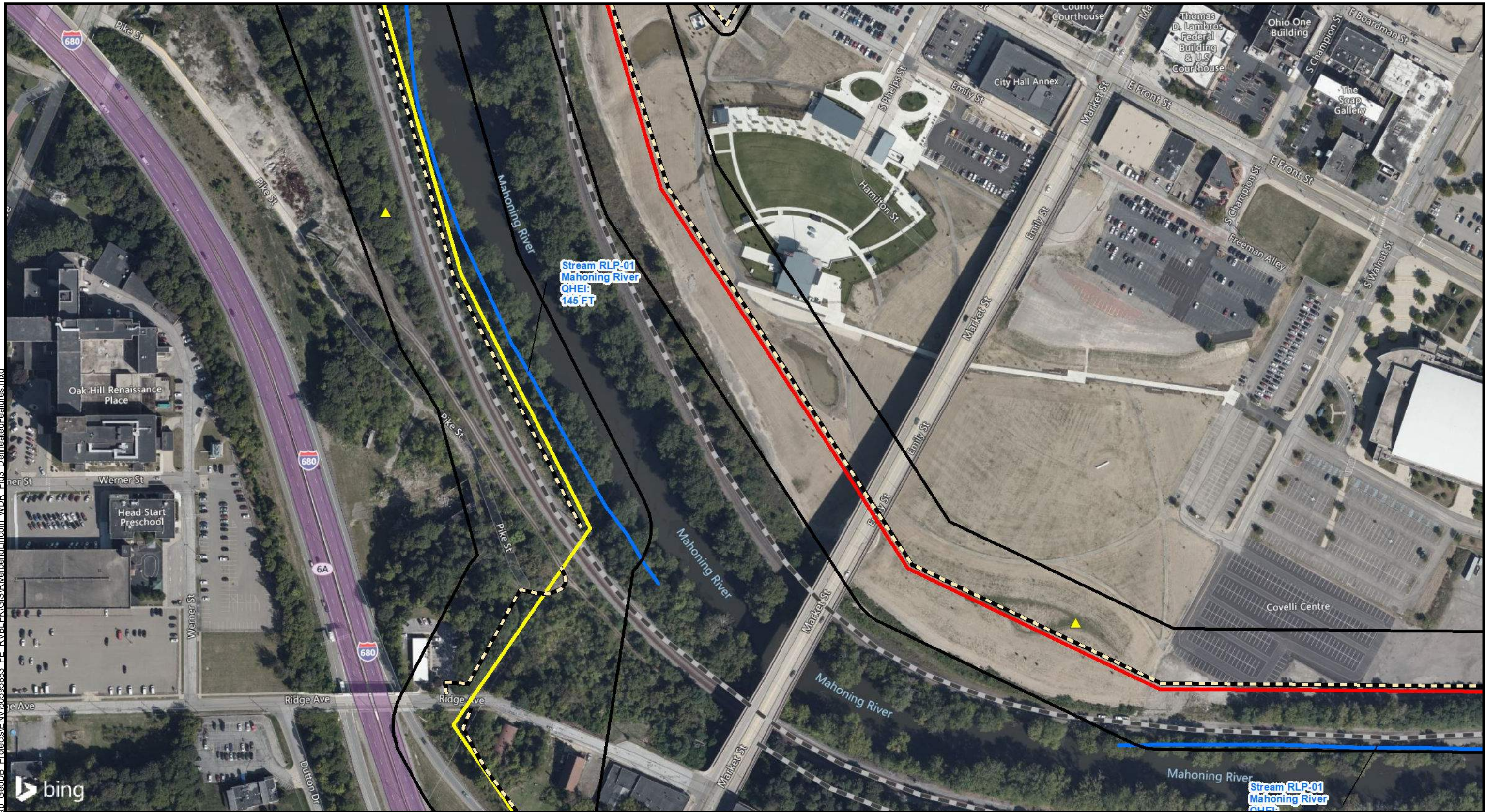
Lincoln Park-Riverbend 138kV  
Transmission Line Project

**FIGURE 3**  
SHEET 2 of 22  
WETLAND DELINEATION AND  
STREAM ASSESSMENT MAP

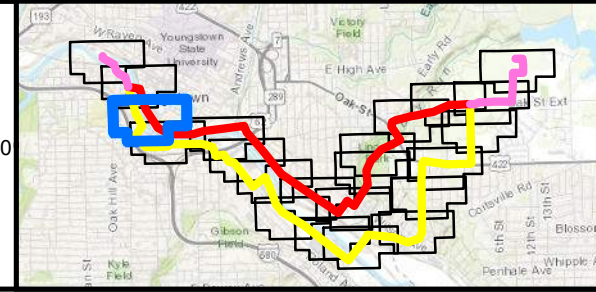
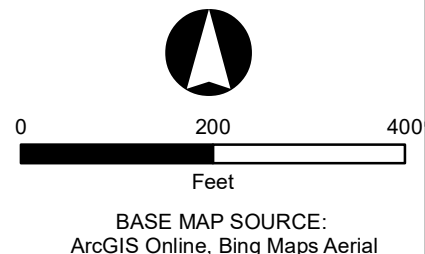
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- LEGEND**
- |                     |   |                    |
|---------------------|---|--------------------|
| Existing Substation | Proposed Riverbend Substation Expansion | Upland Data Point  |
| Alternate Route     | Proposed Access Road                    | Wetland Data Point |
| Common Route        | Delineated Stream (HHEI)                | Railroad           |
| Preferred Route     | Delineated Stream (QHEI)                |                    |
| Survey Boundary     | Delineated Wetland                      |                    |





Lincoln Park-Riverbend 138kV  
Transmission Line Project

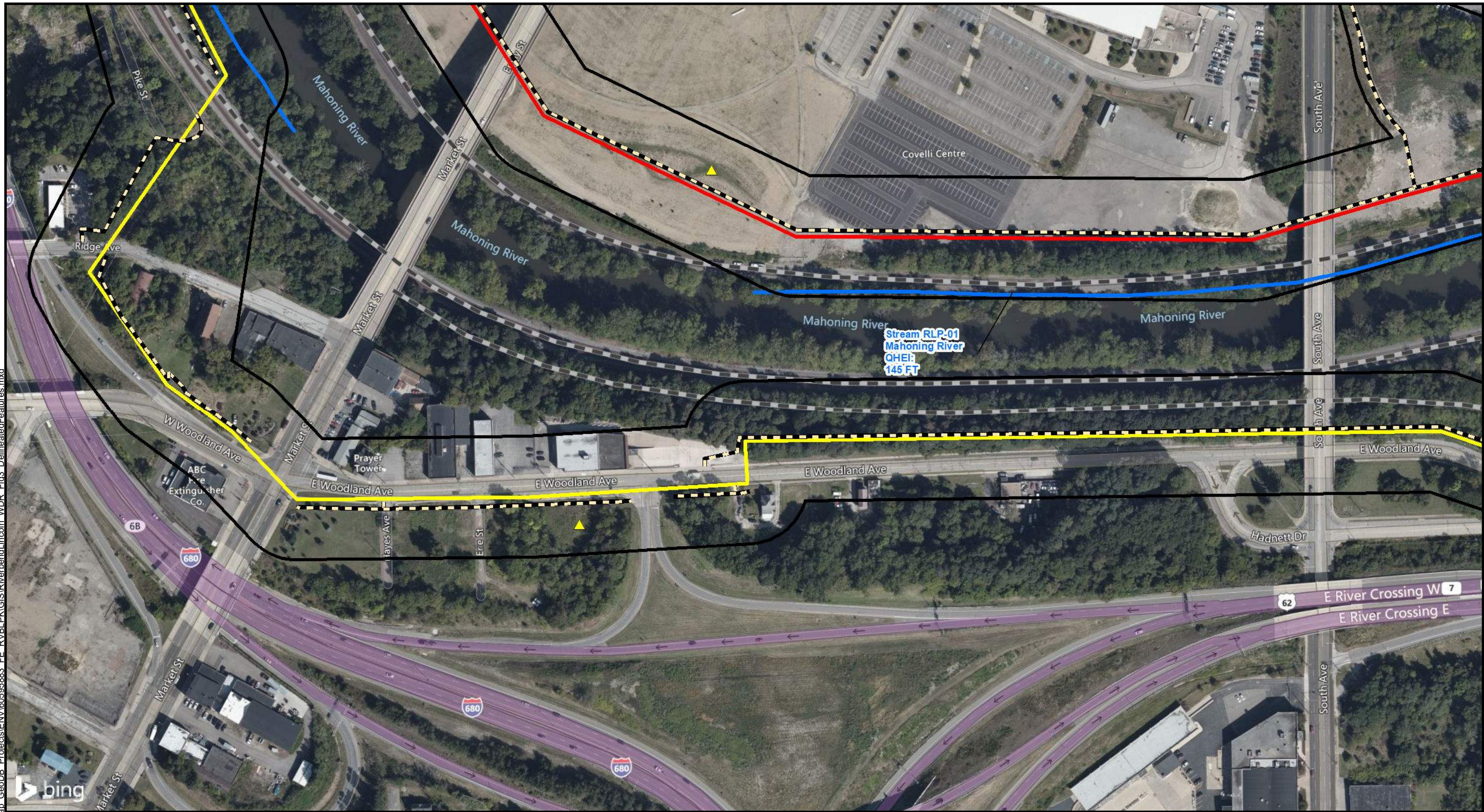
FIGURE 3  
SHEET 3 of 22  
WETLAND DELINEATION AND  
STREAM ASSESSMENT MAP



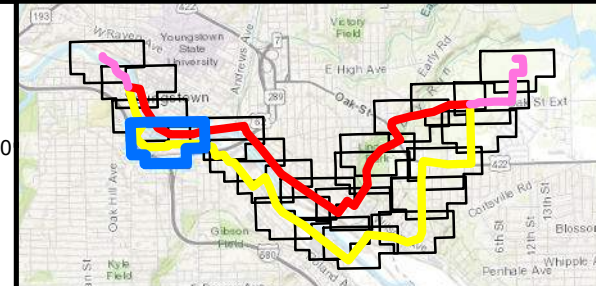
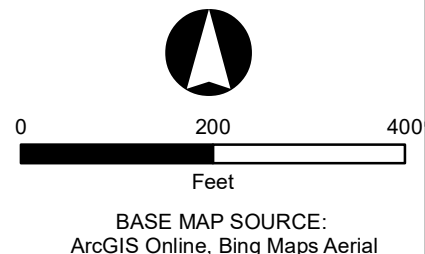
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- LEGEND**
- |                     |   |                    |
|---------------------|---|--------------------|
| Existing Substation | Proposed Riverbend Substation Expansion | Upland Data Point  |
| Alternate Route     | Proposed Access Road                    | Wetland Data Point |
| Common Route        | Delineated Stream (HHEI)                | Railroad           |
| Preferred Route     | Delineated Stream (QHEI)                |                    |
| Survey Boundary     | Delineated Wetland                      |                    |



Lincoln Park-Riverbend 138kV  
Transmission Line Project

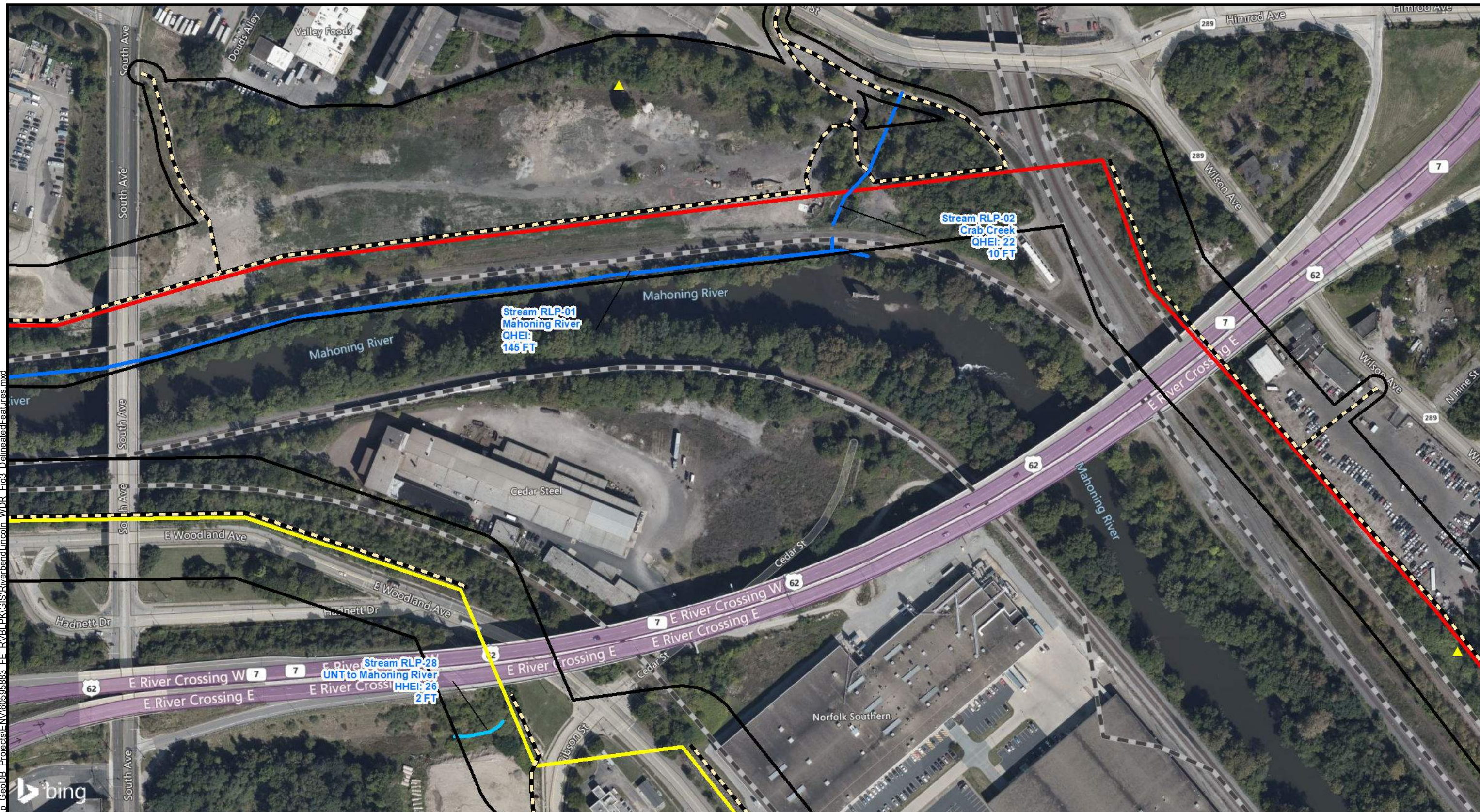
FIGURE 3  
SHEET 4 of 22  
WETLAND DELINEATION AND  
STREAM ASSESSMENT MAP

JOB NO. 60595883



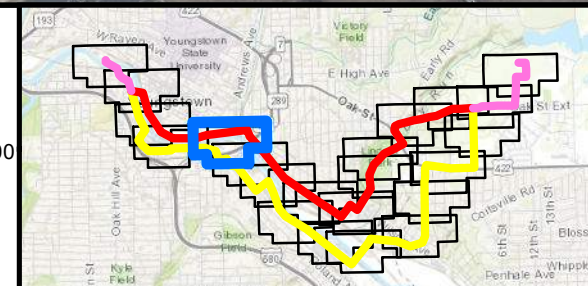
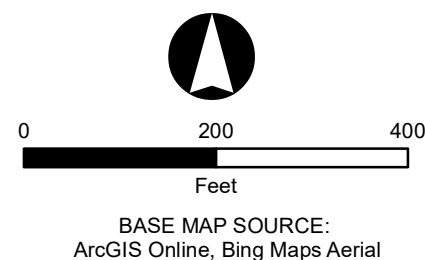


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#### LEGEND

- |                     |   |                    |
|---------------------|---|--------------------|
| Existing Substation | Proposed Riverbend Substation Expansion | Upland Data Point  |
| Alternate Route     | Proposed Access Road                    | Wetland Data Point |
| Common Route        | Delineated Stream (HHEI)                | Railroad           |
| Preferred Route     | Delineated Stream (QHEI)                |                    |
| Survey Boundary     | Delineated Wetland                      |                    |



Lincoln Park-Riverbend 138kV  
Transmission Line Project

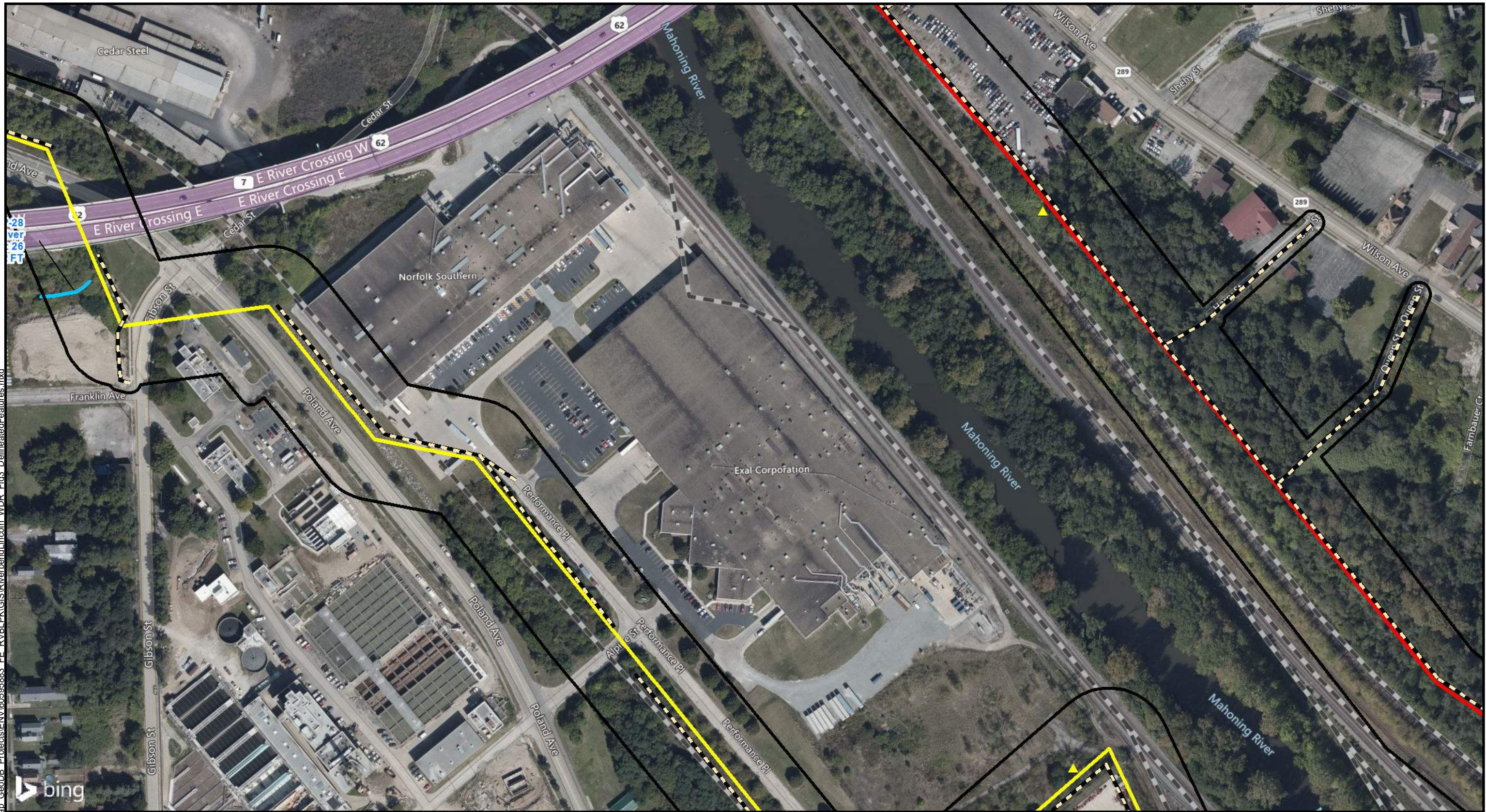
FIGURE 3  
SHEET 5 of 22  
WETLAND DELINEATION AND  
STREAM ASSESSMENT MAP

JOB NO. 60595883

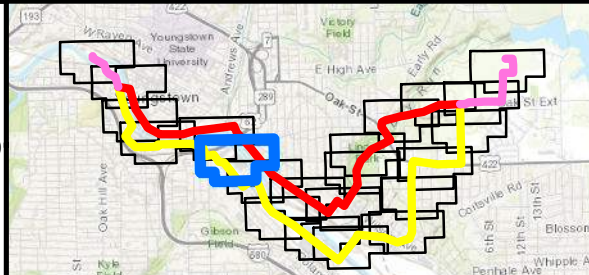
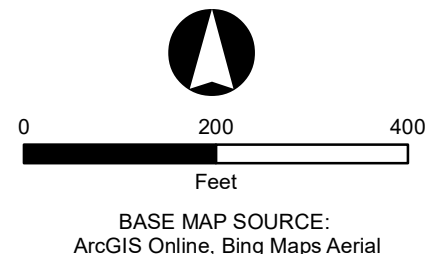




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- LEGEND**
- |                     |   |                    |
|---------------------|---|--------------------|
| Existing Substation | Proposed Riverbend Substation Expansion | Upland Data Point  |
| Alternate Route     | Proposed Access Road                    | Wetland Data Point |
| Common Route        | Delineated Stream (HHEI)                | Railroad           |
| Preferred Route     | Delineated Stream (QHEI)                |                    |
| Survey Boundary     | Delineated Wetland                      |                    |



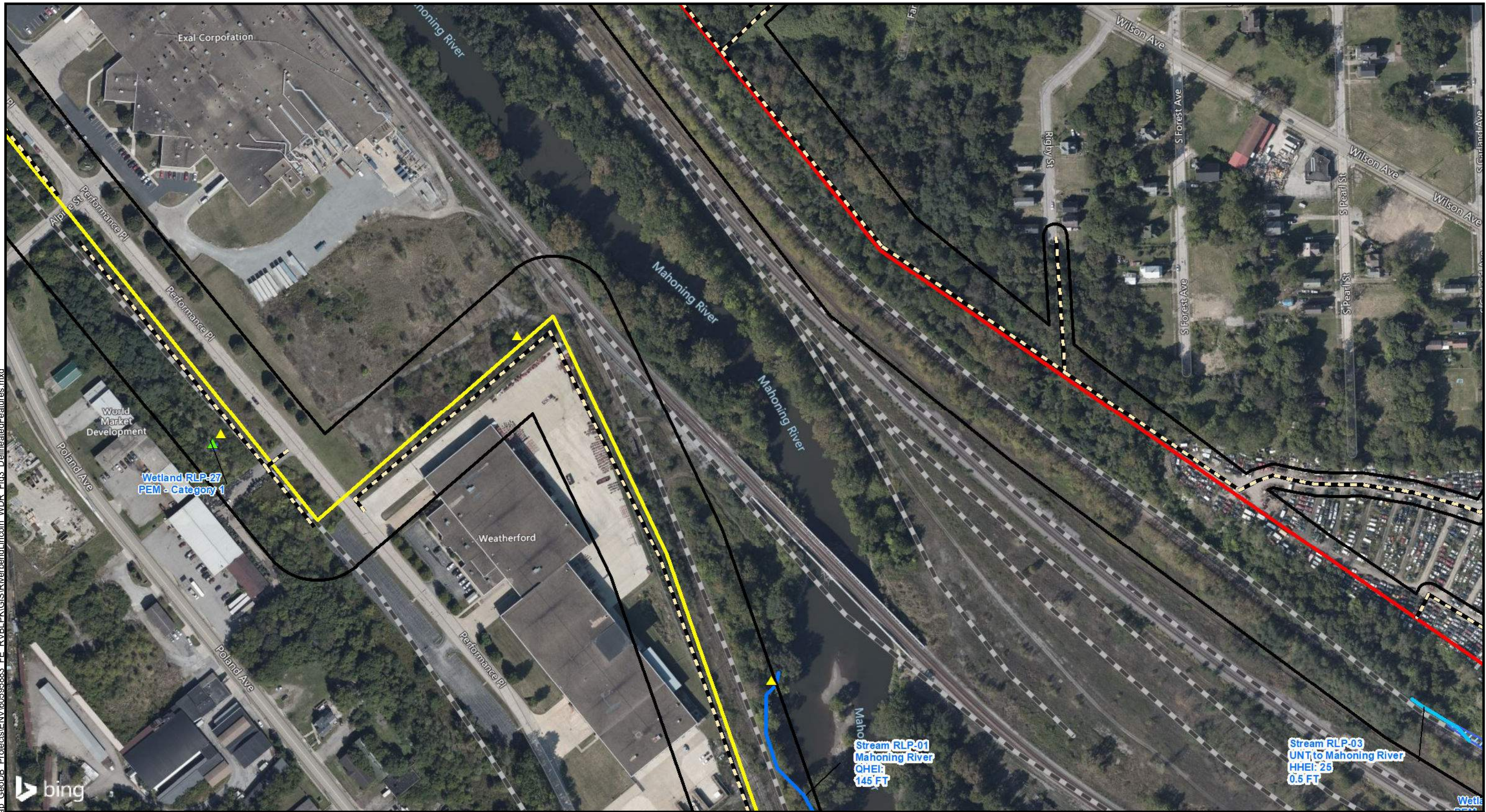
**ATSI** Lincoln Park-Riverbend 138kV Transmission Line Project

**FIGURE 3**  
SHEET 6 of 22  
WETLAND DELINEATION AND  
STREAM ASSESSMENT MAP

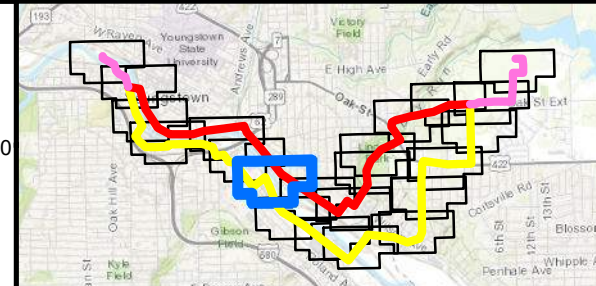
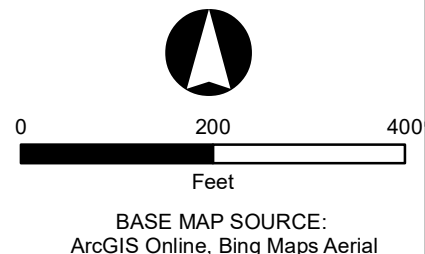
JOB NO. 60595883 **AECOM**




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- LEGEND**
- |                     |   |                    |
|---------------------|---|--------------------|
| Existing Substation | Proposed Riverbend Substation Expansion | Upland Data Point  |
| Alternate Route     | Proposed Access Road                    | Wetland Data Point |
| Common Route        | Delineated Stream (HHEI)                | Railroad           |
| Preferred Route     | Delineated Stream (QHEI)                |                    |
| Survey Boundary     | Delineated Wetland                      |                    |





Lincoln Park-Riverbend 138kV  
Transmission Line Project

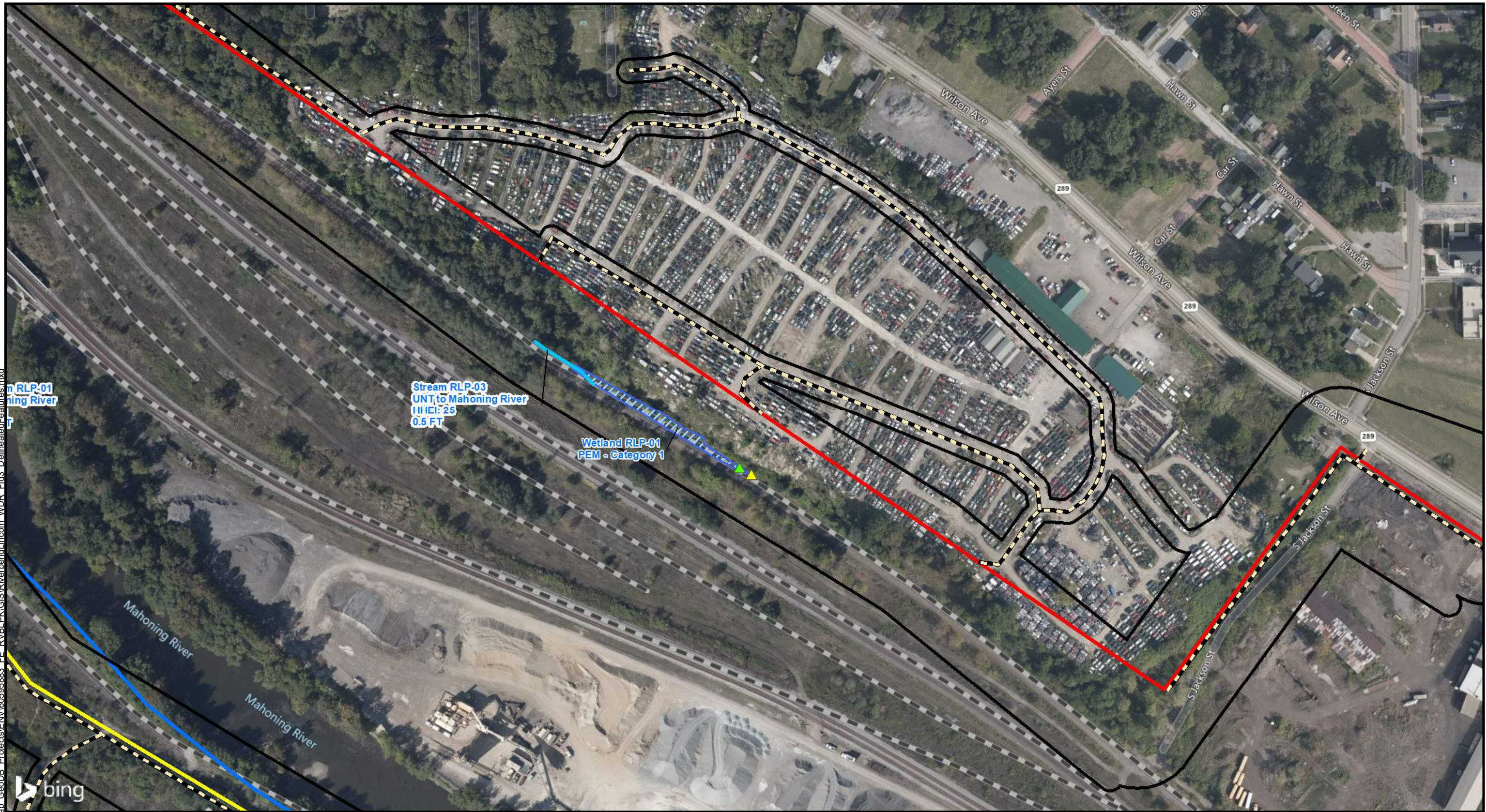
FIGURE 3  
SHEET 7 of 22  
WETLAND DELINEATION AND  
STREAM ASSESSMENT MAP



JOB NO. 60595883

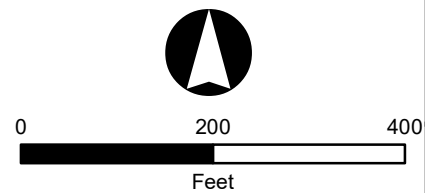


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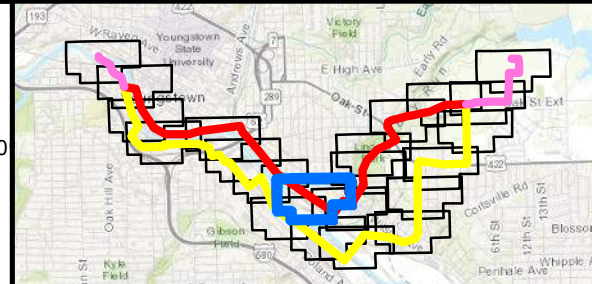


LEGEND

- |                     |   |                    |
|---------------------|---|--------------------|
| Existing Substation | Proposed Riverbend Substation Expansion | Upland Data Point  |
| Alternate Route     | Proposed Access Road                    | Wetland Data Point |
| Common Route        | Delineated Stream (HHEI)                | Railroad           |
| Preferred Route     | Delineated Stream (QHEI)                |                    |
| Survey Boundary     | Delineated Wetland                      |                    |



BASE MAP SOURCE:  
ArcGIS Online, Bing Maps Aerial



Lincoln Park-Riverbend 138kV  
Transmission Line Project

FIGURE 3  
SHEET 8 of 22  
WETLAND DELINEATION AND  
STREAM ASSESSMENT MAP

JOB NO. 60595883

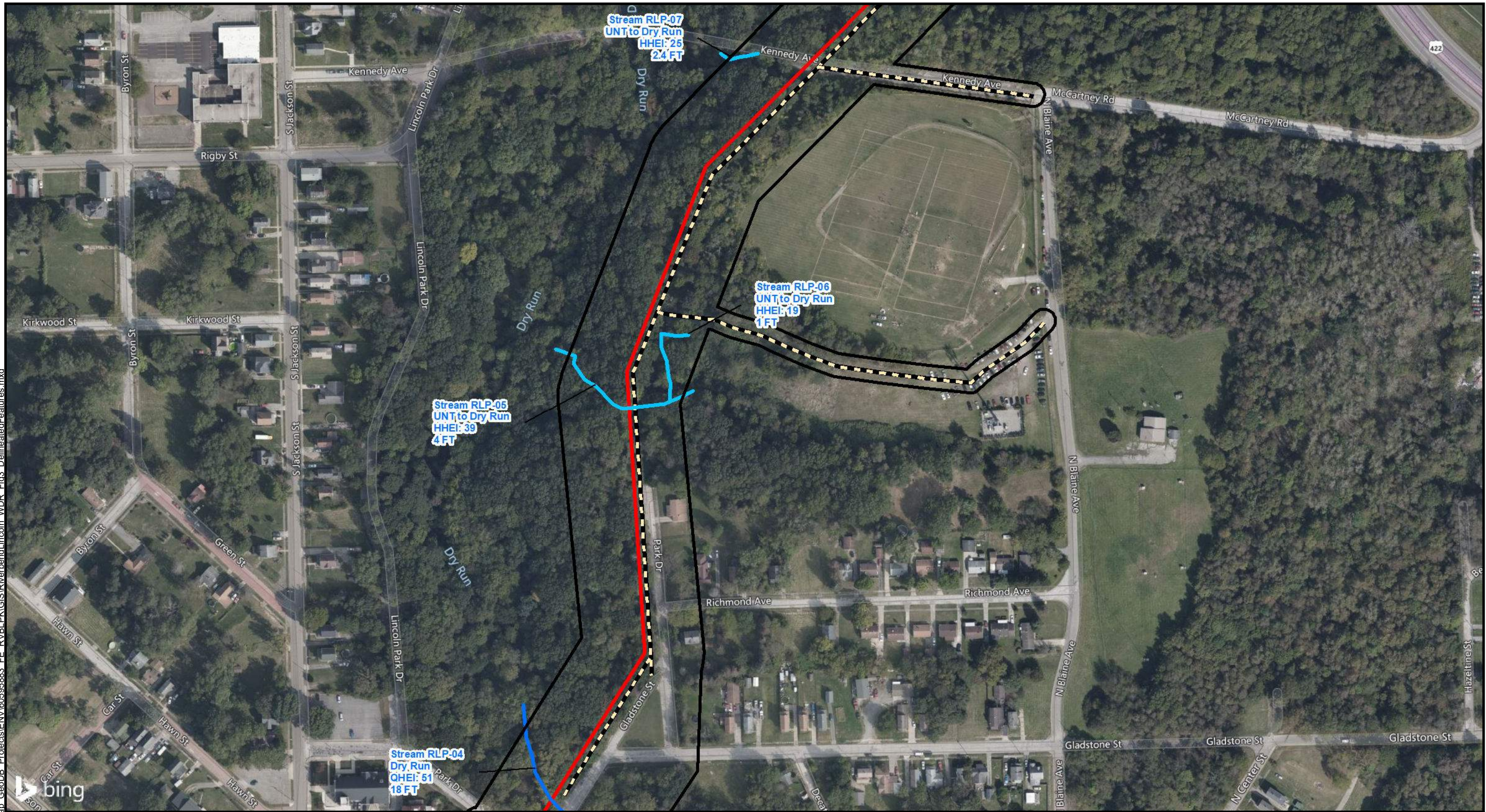






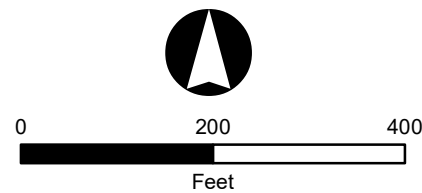


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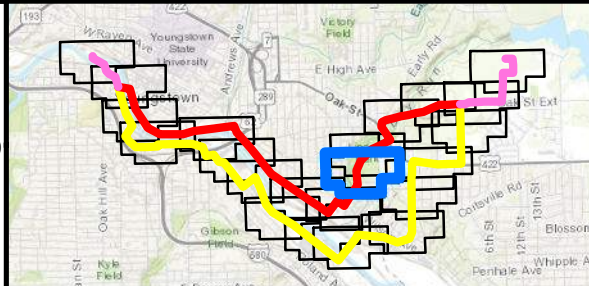


- LEGEND**
- |                     |   |                    |
|---------------------|---|--------------------|
| Existing Substation | Proposed Riverbend Substation Expansion | Upland Data Point  |
| Alternate Route     | Proposed Access Road                    | Wetland Data Point |
| Common Route        | Delineated Stream (HHEI)                | Railroad           |
| Preferred Route     | Delineated Stream (QHEI)                |                    |
| Survey Boundary     | Delineated Wetland                      |                    |

- Upland Data Point  
Wetland Data Point  
Railroad



BASE MAP SOURCE:  
ArcGIS Online, Bing Maps Aerial



Lincoln Park-Riverbend 138kV  
Transmission Line Project

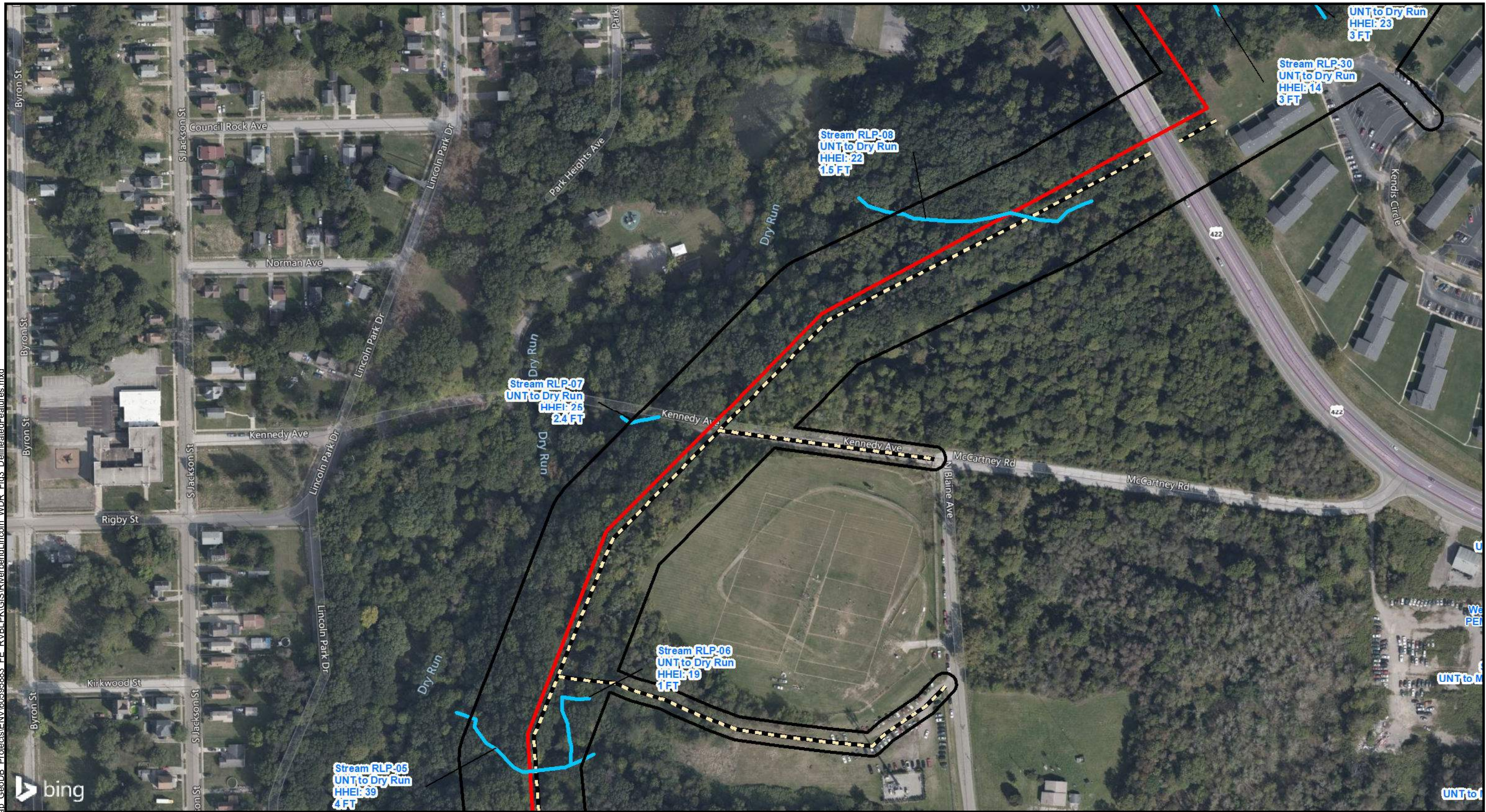
FIGURE 3  
SHEET 10 of 22  
WETLAND DELINEATION AND  
STREAM ASSESSMENT MAP

JOB NO. 60595883

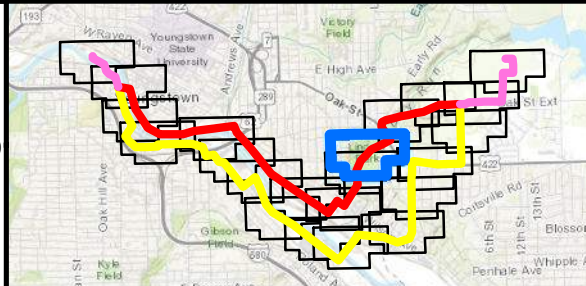
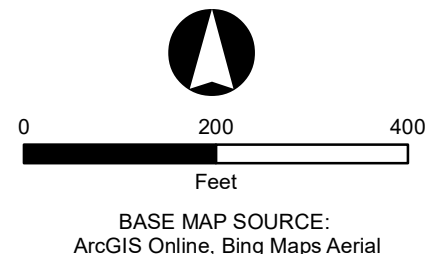





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- LEGEND**
- |                     |   |                    |
|---------------------|---|--------------------|
| Existing Substation | Proposed Riverbend Substation Expansion | Upland Data Point  |
| Alternate Route     | Proposed Access Road                    | Wetland Data Point |
| Common Route        | Delineated Stream (HHEI)                | Railroad           |
| Preferred Route     | Delineated Stream (QHEI)                |                    |
| Survey Boundary     | Delineated Wetland                      |                    |





Lincoln Park-Riverbend 138kV  
Transmission Line Project

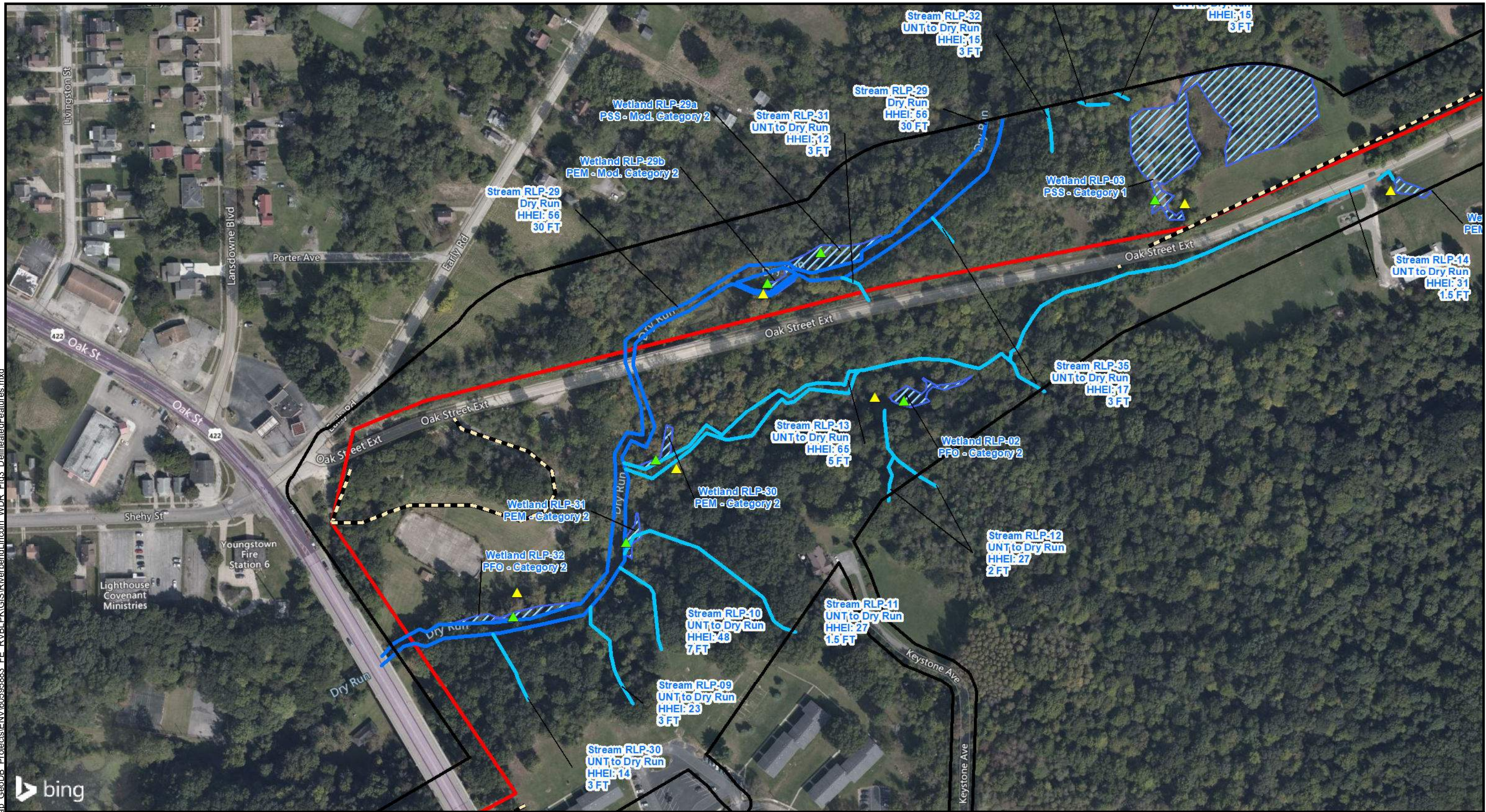
**FIGURE 3**  
SHEET 11 of 22  
WETLAND DELINEATION AND  
STREAM ASSESSMENT MAP

**AECOM**

JOB NO. 60595883

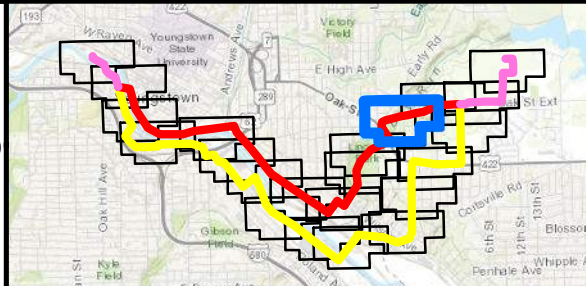
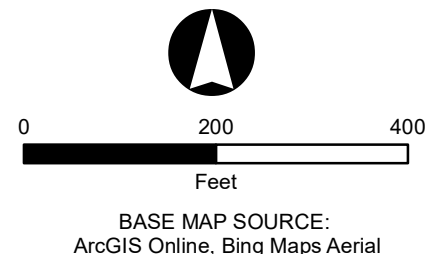


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LEGEND

- |                     |   |                    |
|---------------------|---|--------------------|
| Existing Substation | Proposed Riverbend Substation Expansion | Upland Data Point  |
| Alternate Route     | Proposed Access Road                    | Wetland Data Point |
| Common Route        | Delineated Stream (HHEI)                | Railroad           |
| Preferred Route     | Delineated Stream (QHEI)                |                    |
| Survey Boundary     | Delineated Wetland                      |                    |



Lincoln Park-Riverbend 138kV  
Transmission Line Project

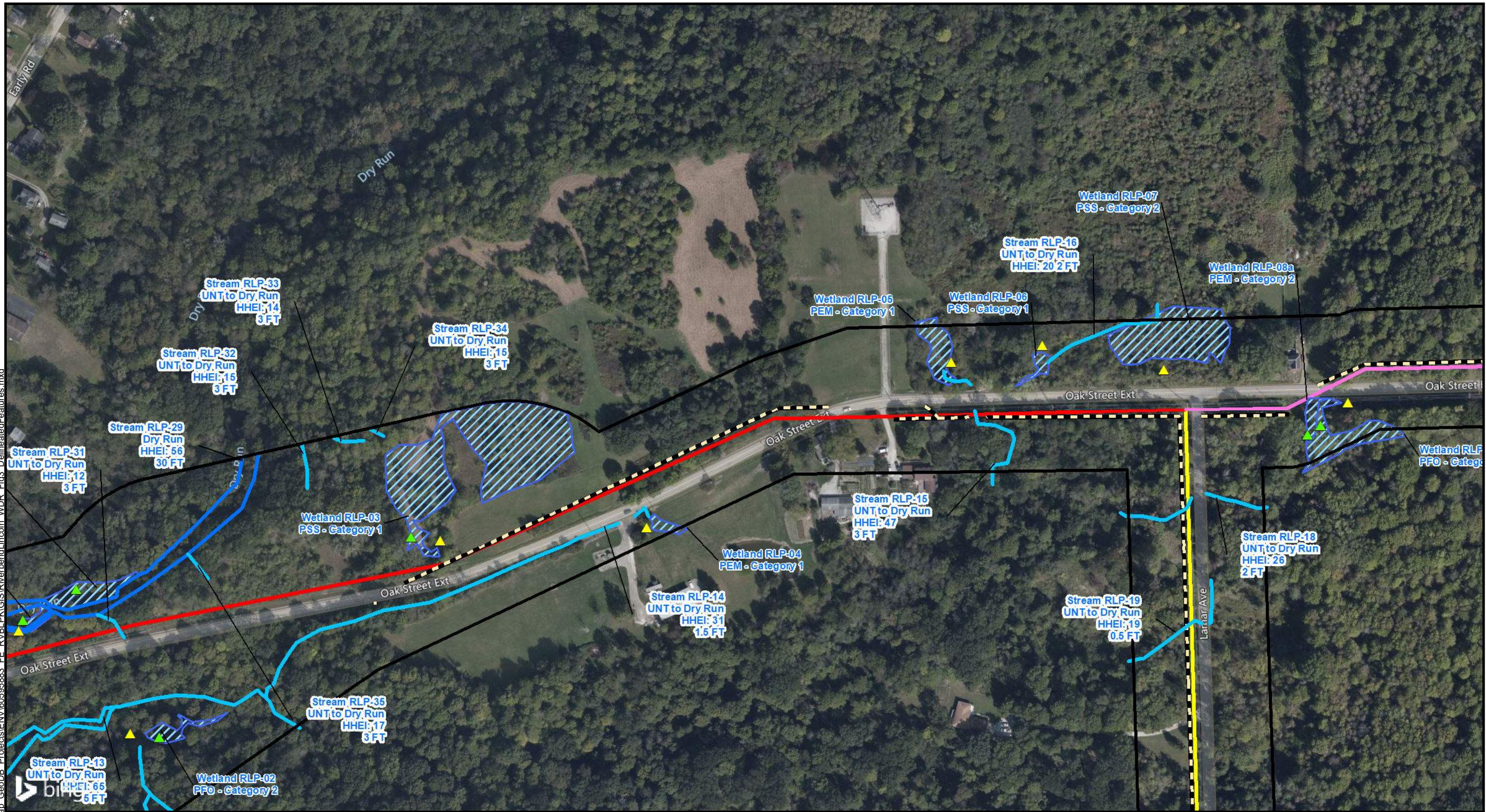
FIGURE 3  
SHEET 12 of 22  
WETLAND DELINEATION AND  
STREAM ASSESSMENT MAP

JOB NO. 60595883

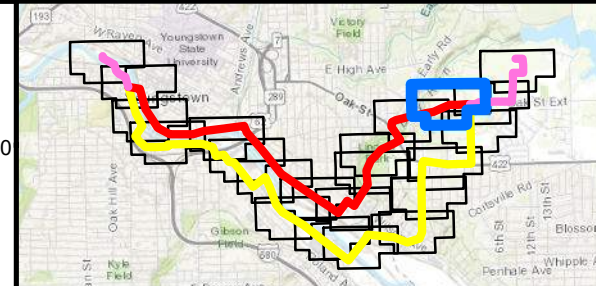
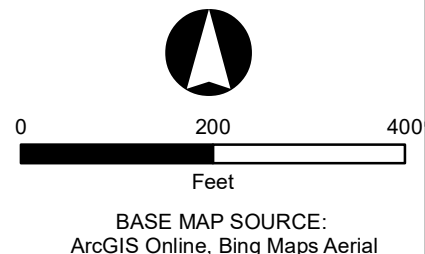





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- LEGEND**
- |                     |   |                    |
|---------------------|---|--------------------|
| Existing Substation | Proposed Riverbend Substation Expansion | Upland Data Point  |
| Alternate Route     | Proposed Access Road                    | Wetland Data Point |
| Common Route        | Delineated Stream (HHEI)                | Railroad           |
| Preferred Route     | Delineated Stream (QHEI)                |                    |
| Survey Boundary     | Delineated Wetland                      |                    |






Lincoln Park-Riverbend 138kV  
Transmission Line Project

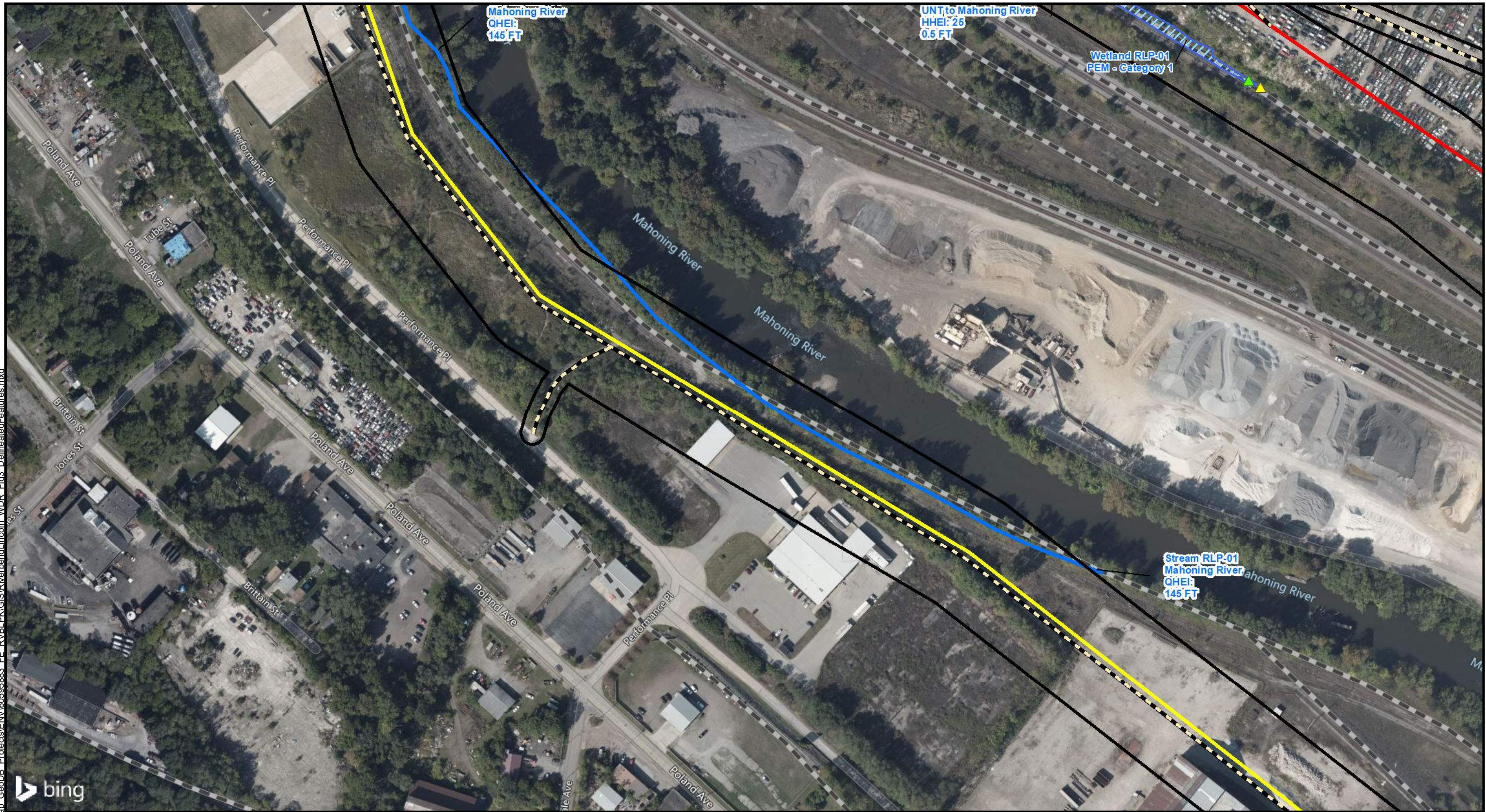
FIGURE 3  
SHEET 13 of 22  
WETLAND DELINEATION AND  
STREAM ASSESSMENT MAP

JOB NO. 60595883



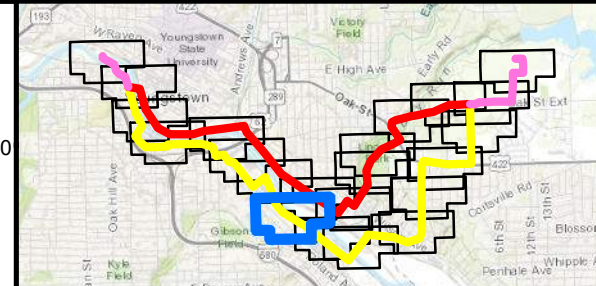
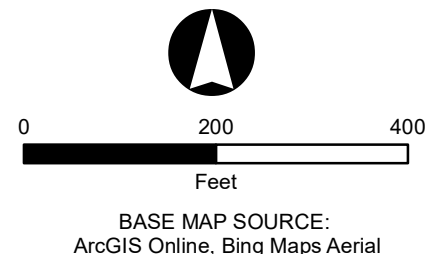


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LEGEND

- |                     |   |                    |
|---------------------|---|--------------------|
| Existing Substation | Proposed Riverbend Substation Expansion | Upland Data Point  |
| Alternate Route     | Proposed Access Road                    | Wetland Data Point |
| Common Route        | Delineated Stream (HHEI)                | Railroad           |
| Preferred Route     | Delineated Stream (QHEI)                |                    |
| Survey Boundary     | Delineated Wetland                      |                    |



Lincoln Park-Riverbend 138kV  
Transmission Line Project

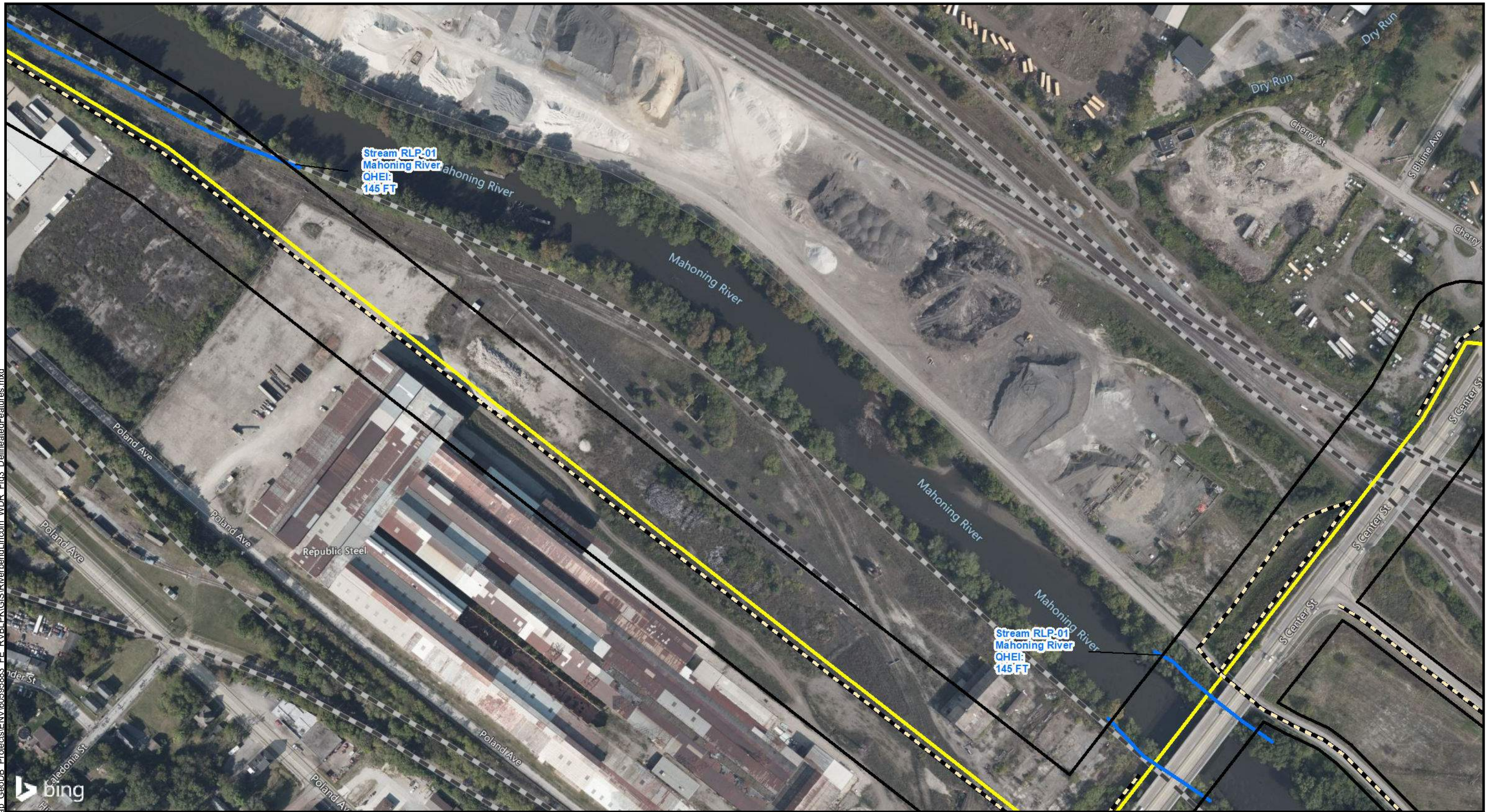
FIGURE 3  
SHEET 14 of 22  
WETLAND DELINEATION AND  
STREAM ASSESSMENT MAP

JOB NO. 60595883

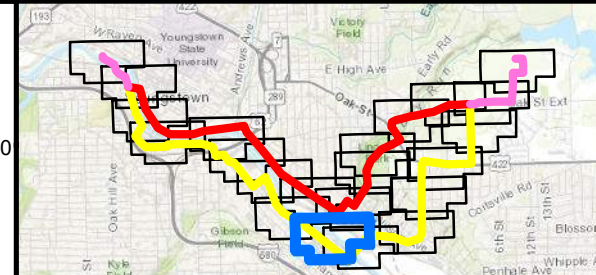
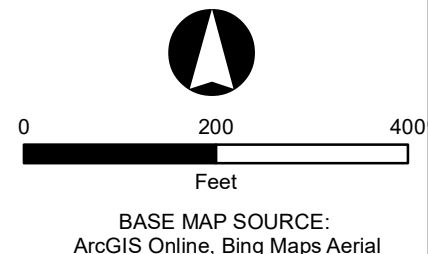




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- LEGEND**
- |                     |   |                    |
|---------------------|---|--------------------|
| Existing Substation | Proposed Riverbend Substation Expansion | Upland Data Point  |
| Alternate Route     | Proposed Access Road                    | Wetland Data Point |
| Common Route        | Delineated Stream (HHEI)                | Railroad           |
| Preferred Route     | Delineated Stream (QHEI)                |                    |
| Survey Boundary     | Delineated Wetland                      |                    |



Lincoln Park-Riverbend 138kV  
Transmission Line Project

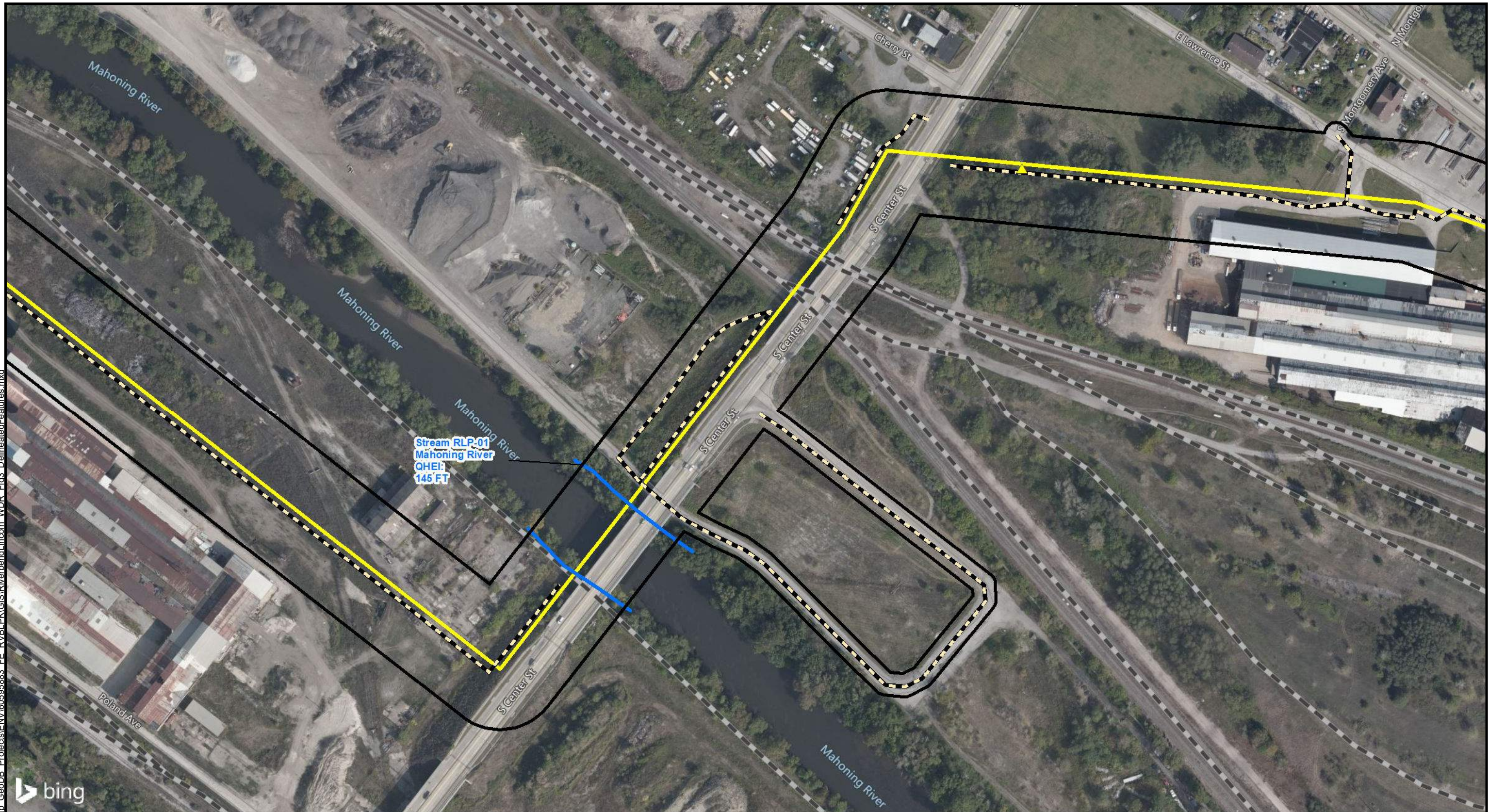
FIGURE 3  
SHEET 15 of 22  
WETLAND DELINEATION AND  
STREAM ASSESSMENT MAP

JOB NO. 60595883





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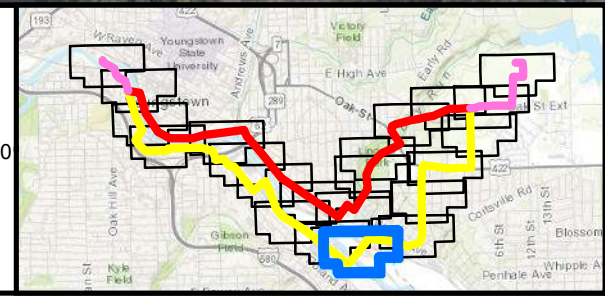




**LEGEND**

Existing Substation	Proposed Riverbend Substation Expansion
Alternate Route	Proposed Access Road
Common Route	Delineated Stream (HHEI)
Preferred Route	Delineated Stream (QHEI)
Survey Boundary	Delineated Wetland

Upland Data Point	 0 200 400 Feet
Wetland Data Point	
Railroad	

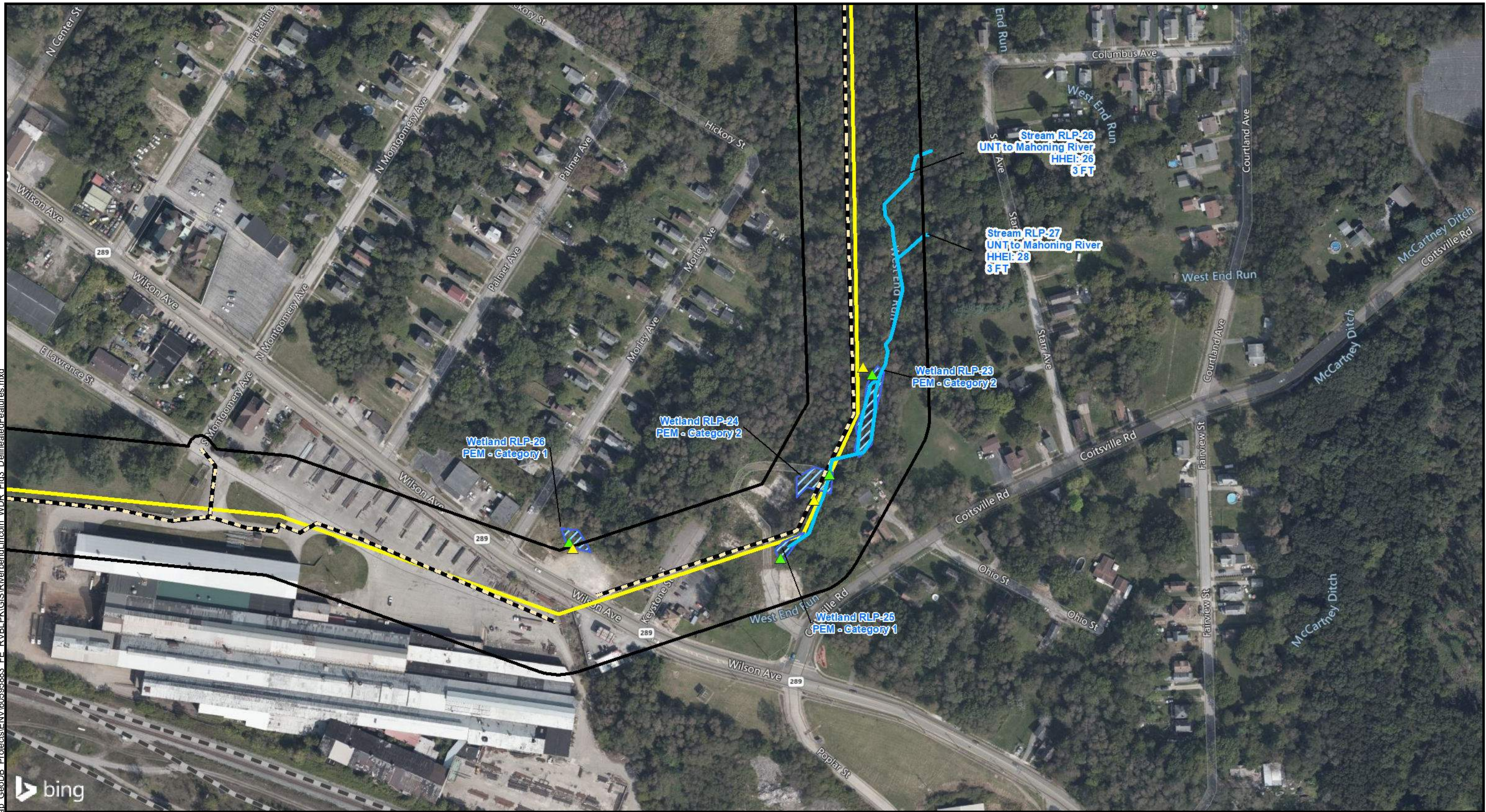
BASE MAP SOURCE:  
ArcGIS Online, Bing Maps Aerial



	Lincoln Park-Riverbend 138kV Transmission Line Project
<b>FIGURE 3</b> SHEET 16 of 22 WETLAND DELINEATION AND STREAM ASSESSMENT MAP	
JOB NO. 60595883	
	

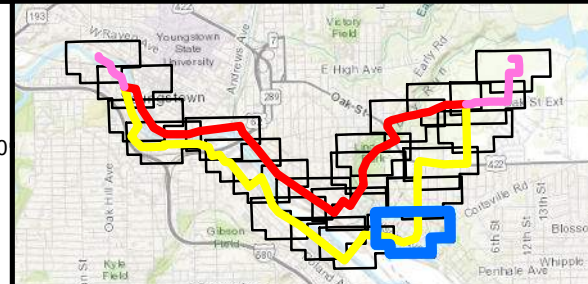
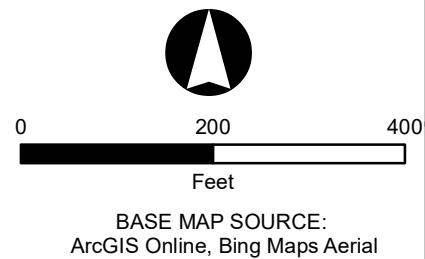


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LEGEND

- |                     |   |                    |
|---------------------|---|--------------------|
| Existing Substation | Proposed Riverbend Substation Expansion | Upland Data Point  |
| Alternate Route     | Proposed Access Road                    | Wetland Data Point |
| Common Route        | Delineated Stream (HHEI)                | Railroad           |
| Preferred Route     | Delineated Stream (QHEI)                |                    |
| Survey Boundary     | Delineated Wetland                      |                    |



Lincoln Park-Riverbend 138kV  
Transmission Line Project

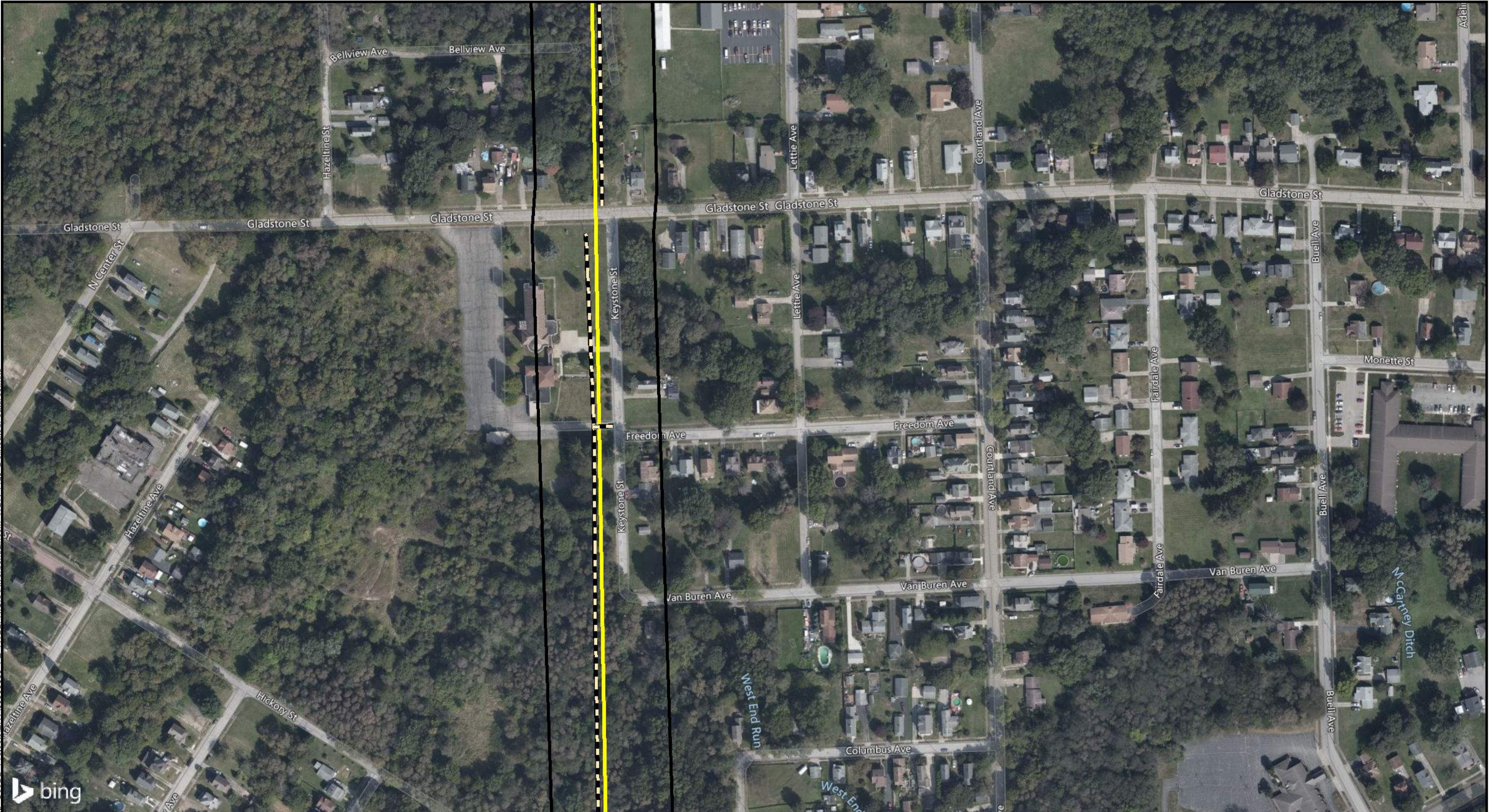
FIGURE 3  
SHEET 17 of 22  
WETLAND DELINEATION AND  
STREAM ASSESSMENT MAP

JOB NO. 60595883







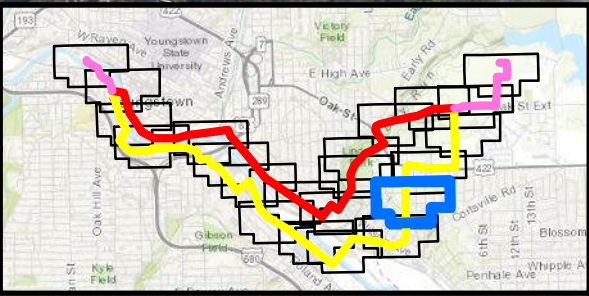
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**LEGEND**

Existing Substation	Proposed Riverbend Substation Expansion	Upland Data Point
Alternate Route	Proposed Access Road	Wetland Data Point
Common Route	Delineated Stream (HHEI)	Railroad
Preferred Route	Delineated Stream (QHEI)	
Survey Boundary	Delineated Wetland	

  
  
Feet  
BASE MAP SOURCE:  
ArcGIS Online, Bing Maps Aerial





  
Lincoln Park-Riverbend 138kV  
Transmission Line Project

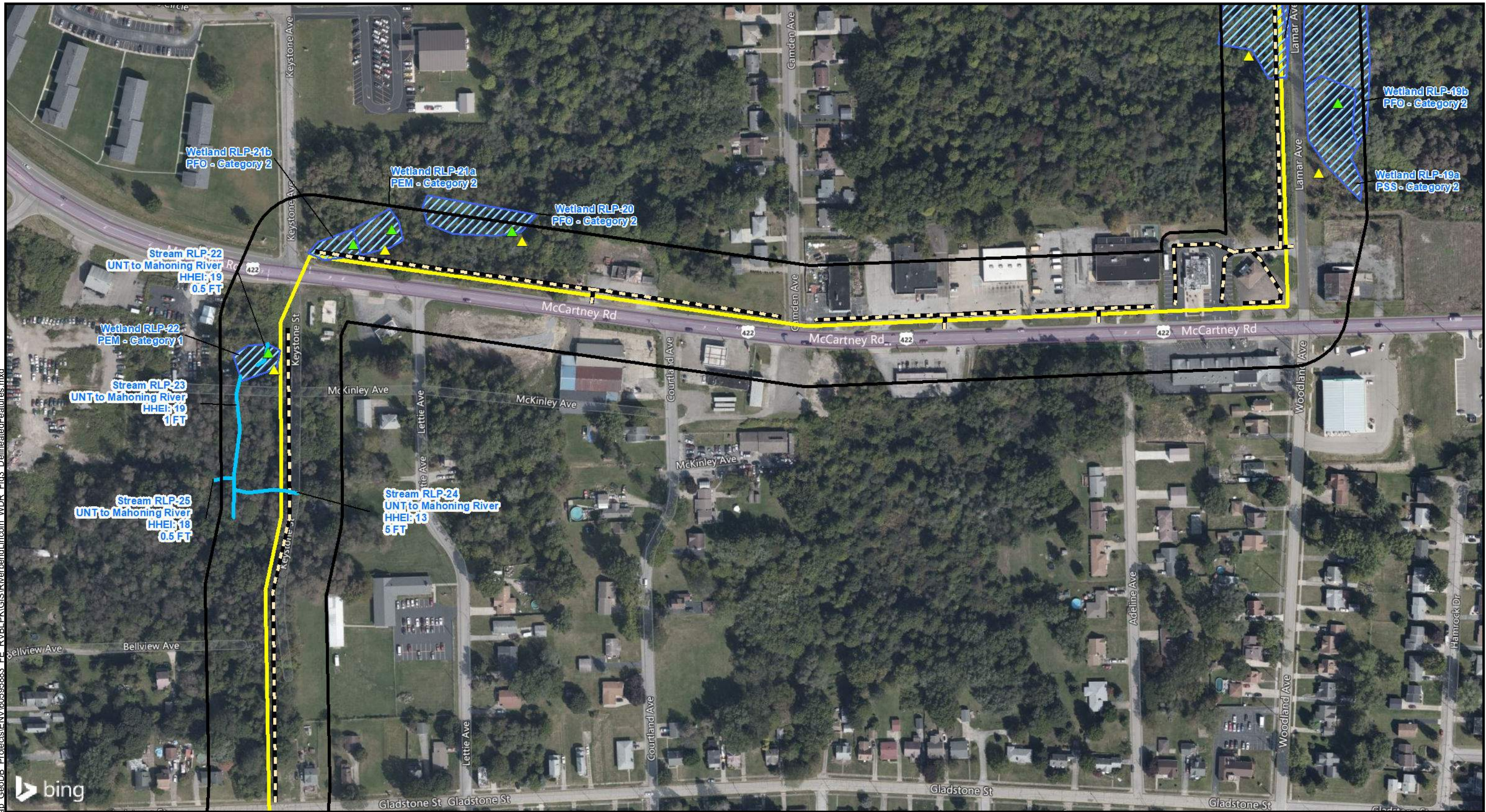
FIGURE 3  
SHEET 18 of 22  
WETLAND DELINEATION AND  
STREAM ASSESSMENT MAP



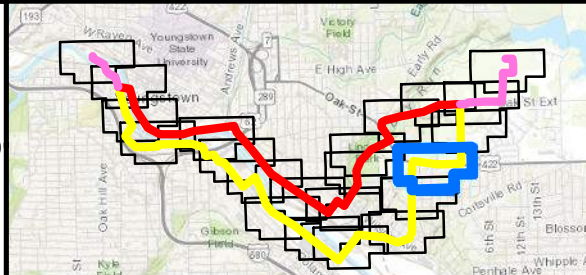
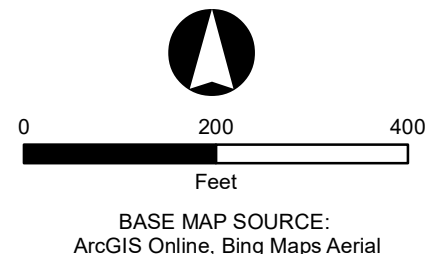
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- LEGEND**
- |                     |   |                    |
|---------------------|---|--------------------|
| Existing Substation | Proposed Riverbend Substation Expansion | Upland Data Point  |
| Alternate Route     | Proposed Access Road                    | Wetland Data Point |
| Common Route        | Delineated Stream (HHEI)                | Railroad           |
| Preferred Route     | Delineated Stream (QHEI)                |                    |
| Survey Boundary     | Delineated Wetland                      |                    |



Lincoln Park-Riverbend 138kV  
Transmission Line Project

FIGURE 3  
SHEET 19 of 22  
WETLAND DELINEATION AND  
STREAM ASSESSMENT MAP

JOB NO. 60595883





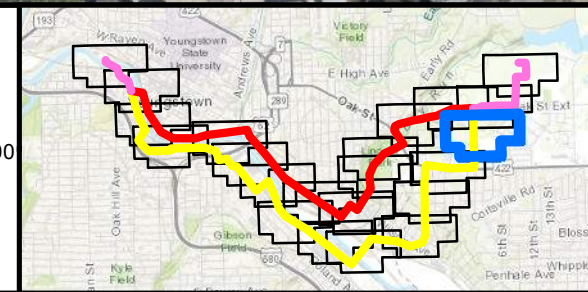
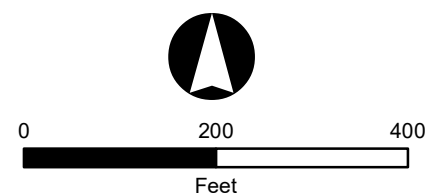
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LEGEND

- |                     |   |
|---------------------|---|
| Existing Substation | Proposed Riverbend Substation Expansion |
| Alternate Route     | Proposed Access Road                    |
| Common Route        | Delineated Stream (HHEI)                |
| Preferred Route     | Delineated Stream (QHEI)                |
| Survey Boundary     | Delineated Wetland                      |

- |                    |
|--------------------|
| Upland Data Point  |
| Wetland Data Point |
| Railroad           |



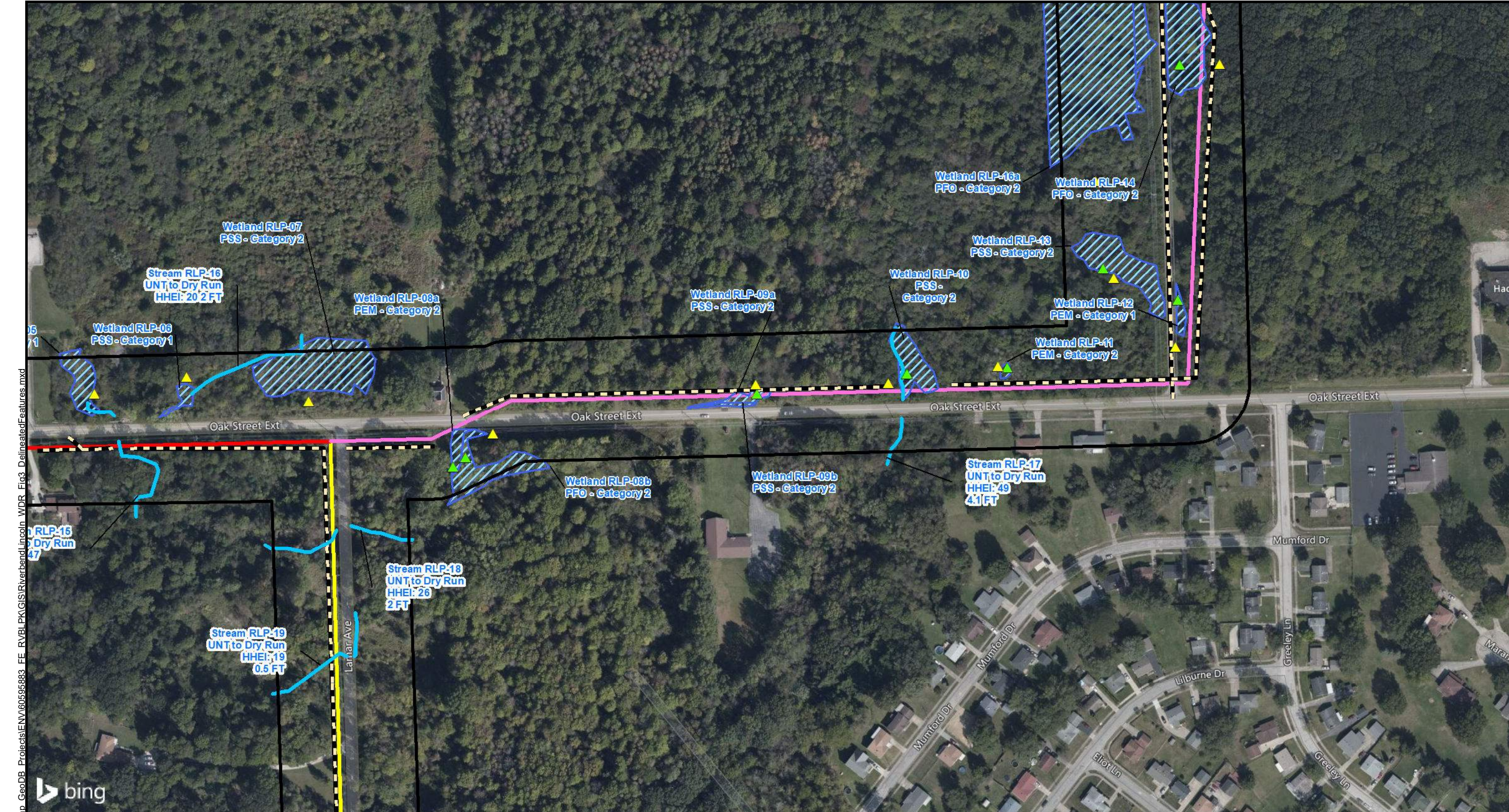
Lincoln Park-Riverbend 138kV  
Transmission Line Project

FIGURE 3  
SHEET 20 of 22  
WETLAND DELINEATION AND  
STREAM ASSESSMENT MAP

JOB NO. 60595883





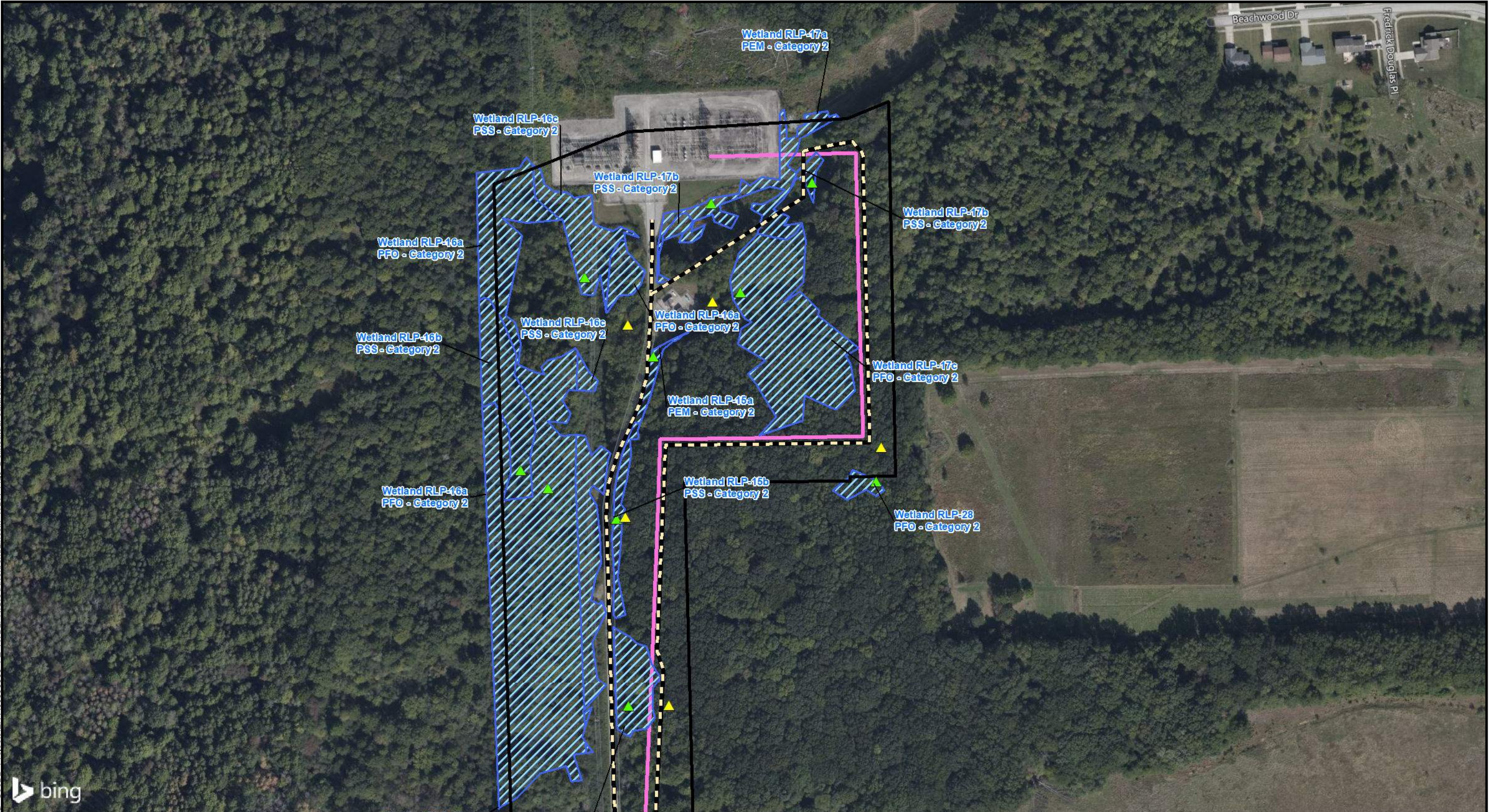


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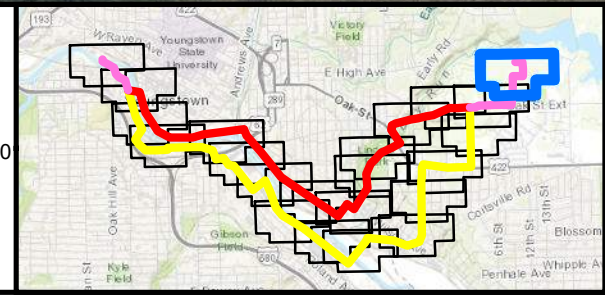
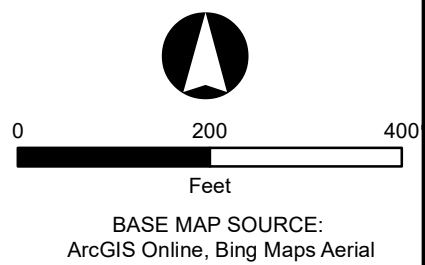



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LEGEND


- |                     |   |                    |
|---------------------|---|--------------------|
| Existing Substation | Proposed Riverbend Substation Expansion | Upland Data Point  |
| Alternate Route     | Proposed Access Road                    | Wetland Data Point |
| Common Route        | Delineated Stream (HHEI)                | Railroad           |
| Preferred Route     | Delineated Stream (QHEI)                |                    |
| Survey Boundary     | Delineated Wetland                      |                    |





Lincoln Park-Riverbend 138kV  
Transmission Line Project

FIGURE 3  
SHEET 22 of 22  
WETLAND DELINEATION AND  
STREAM ASSESSMENT MAP

JOB NO. 60595883



**APPENDIX A****U.S. ARMY CORPS OF ENGINEERS WETLAND FORMS**



## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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.):** Foothills **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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 <i>Typa angustifolia</i> and <i>Phragmites australis</i> .	

**Hydrology**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	1
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Wetland receives water from precipitation and runoff from surrounding areas.			



**VEGETATION - Use scientific names of plants**Sampling Point: w-ah-20200108-01

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:																								
1. _____	0	<input type="checkbox"/>	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)																								
2. _____	0	<input type="checkbox"/>	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)																								
3. _____	0	<input type="checkbox"/>	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																								
4. _____	0	<input type="checkbox"/>	_____	<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <td colspan="2">Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species</td> <td style="text-align: center;"><u>70</u></td> <td>x 1 = <u>70</u></td> </tr> <tr> <td>FACW species</td> <td style="text-align: center;"><u>34</u></td> <td>x 2 = <u>68</u></td> </tr> <tr> <td>FAC species</td> <td style="text-align: center;"><u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species</td> <td style="text-align: center;"><u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species</td> <td style="text-align: center;"><u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td style="text-align: center;"><u>104</u> (A)</td> <td style="text-align: center;"><u>138</u> (B)</td> </tr> <tr> <td colspan="3">Prevalence Index = B/A = <u>1.327</u></td> </tr> </table>	Total % Cover of:		Multiply by:	OBL species	<u>70</u>	x 1 = <u>70</u>	FACW species	<u>34</u>	x 2 = <u>68</u>	FAC species	<u>0</u>	x 3 = <u>0</u>	FACU species	<u>0</u>	x 4 = <u>0</u>	UPL species	<u>0</u>	x 5 = <u>0</u>	Column Totals:	<u>104</u> (A)	<u>138</u> (B)	Prevalence Index = B/A = <u>1.327</u>		
Total % Cover of:		Multiply by:																										
OBL species	<u>70</u>	x 1 = <u>70</u>																										
FACW species	<u>34</u>	x 2 = <u>68</u>																										
FAC species	<u>0</u>	x 3 = <u>0</u>																										
FACU species	<u>0</u>	x 4 = <u>0</u>																										
UPL species	<u>0</u>	x 5 = <u>0</u>																										
Column Totals:	<u>104</u> (A)	<u>138</u> (B)																										
Prevalence Index = B/A = <u>1.327</u>																												
5. _____	0	<input type="checkbox"/>	_____																									
6. _____	0	<input type="checkbox"/>	_____																									
7. _____	0	<input type="checkbox"/>	_____																									
<b>Sapling/Shrub Stratum (Plot size: <u>15ft</u> )</b>																												
1. <u>Platanus occidentalis</u>	4	<input type="checkbox"/>	FACW																									
2. _____	0	<input type="checkbox"/>	_____																									
3. _____	0	<input type="checkbox"/>	_____																									
4. _____	0	<input type="checkbox"/>	_____																									
5. _____	0	<input type="checkbox"/>	_____																									
6. _____	0	<input type="checkbox"/>	_____																									
7. _____	0	<input type="checkbox"/>	_____																									
<b>Herb Stratum (Plot size: <u>5ft</u> )</b>																												
1. <u>Typha angustifolia</u>	70	<input checked="" type="checkbox"/>	OBL	<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> <b>Rapid Test for Hydrophytic Vegetation</b> <input checked="" type="checkbox"/> <b>Dominance Test is &gt; 50%</b> <input checked="" type="checkbox"/> <b>Prevalence Index is ≤ 3.0<sup>1</sup></b> <input type="checkbox"/> <b>Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</b> <input type="checkbox"/> <b>Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</b>																								
2. <u>Phragmites australis</u>	30	<input checked="" type="checkbox"/>	FACW																									
3. _____	0	<input type="checkbox"/>	_____																									
4. _____	0	<input type="checkbox"/>	_____																									
5. _____	0	<input type="checkbox"/>	_____																									
6. _____	0	<input type="checkbox"/>	_____																									
7. _____	0	<input type="checkbox"/>	_____																									
8. _____	0	<input type="checkbox"/>	_____																									
9. _____	0	<input type="checkbox"/>	_____																									
10. _____	0	<input type="checkbox"/>	_____																									
11. _____	0	<input type="checkbox"/>	_____																									
12. _____	0	<input type="checkbox"/>	_____																									
<b>Woody Vine Stratum (Plot size: <u>30ft</u> )</b>																												
1. _____	0	<input type="checkbox"/>	_____	<b>Definitions of Vegetation Strata:</b>  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.																								
2. _____	0	<input type="checkbox"/>	_____																									
3. _____	0	<input type="checkbox"/>	_____																									
4. _____	0	<input type="checkbox"/>	_____																									
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>																												
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> Vegetation was disturbed 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.



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

[illegible]

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

### Hydric Soil Indicators:

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                 | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)              |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)               | <input type="checkbox"/> Depleted Matrix (F3)                            |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input checked="" type="checkbox"/> Redox Dark Surface (F6)              |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Muck Mineral (S1)              | <input type="checkbox"/> Redox Depressions (F8)                          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)             |  |
| <input type="checkbox"/> Sandy Redox (S5)                     |  |
| <input type="checkbox"/> Stripped Matrix (S6)                 |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |  |

## 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)

<sup>3</sup>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 DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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 hydrologic 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	8
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	0
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>			
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.			



**VEGETATION - Use scientific names of plant**Sampling Point: w-jbl-20200106-01

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Fraxinus pennsylvanica</u>	<u>35</u>	<input checked="" type="checkbox"/>	FACW	Number of Dominant Species That are OBL, FACW, or FAC: <u>5</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>83.3%</u> (A/B)
2. <u>Quercus palustris</u>	<u>5</u>	<input type="checkbox"/>	FACW	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u>)</b>				<b>Prevalence Index worksheet:</b>  Total % Cover of:      Multiply by: OBL species <u>40</u> x 1 = <u>40</u> FACW species <u>110</u> x 2 = <u>220</u> FAC species <u>35</u> x 3 = <u>105</u> FACU species <u>15</u> x 4 = <u>60</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>200</u> (A) <u>425</u> (B)  Prevalence Index = B/A = <u>2.125</u>
1. <u>Fraxinus pennsylvanica</u>	<u>20</u>	<input checked="" type="checkbox"/>	FACW	
2. <u>Acer saccharum</u>	<u>15</u>	<input checked="" type="checkbox"/>	FACU	
3. <u>Acer saccharinum</u>	<u>5</u>	<input type="checkbox"/>	FACW	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Herb Stratum (Plot size: <u>5'</u>)</b>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Epilobium coloratum</u>	<u>40</u>	<input checked="" type="checkbox"/>	OBL	
2. <u>Cyperus esculentus</u>	<u>25</u>	<input checked="" type="checkbox"/>	FACW	
3. <u>Geum canadense</u>	<u>20</u>	<input type="checkbox"/>	FAC	
4. <u>Solidago gigantea</u>	<u>15</u>	<input type="checkbox"/>	FACW	
5. <u>Lysimachia nummularia</u>	<u>10</u>	<input type="checkbox"/>	FACW	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
8. _____	<u>0</u>	<input type="checkbox"/>	_____	
9. _____	<u>0</u>	<input type="checkbox"/>	_____	
10. _____	<u>0</u>	<input type="checkbox"/>	_____	
11. _____	<u>0</u>	<input type="checkbox"/>	_____	
12. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Woody Vine Stratum (Plot size: <u>30'</u>)</b>				<b>Definitions of Vegetation Strata</b>  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.
1. <u>Vitis riparia</u>	<u>15</u>	<input checked="" type="checkbox"/>	FAC	
2. _____	<u>0</u>	<input type="checkbox"/>	_____	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>				
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> Dominant stratum observed 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.



[illegible]



**WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region****Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line**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.**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	4
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	0
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>			
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	Dominance Test worksheet:
1. <i>Fraxinus pennsylvanica</i>	5	<input checked="" type="checkbox"/>	FACW	
2. _____	0	<input type="checkbox"/>	_____	Total Number of Dominant Species Across All Strata: <u>6</u> (B)
3. _____	0	<input type="checkbox"/>	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
4. _____	0	<input type="checkbox"/>	_____	Prevalence Index worksheet:
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	OBL species <u>40</u> x 1 = <u>40</u>
7. _____	0	<input type="checkbox"/>	_____	FACW species <u>65</u> x 2 = <u>130</u>
	5 = Total Cover			FAC species <u>45</u> x 3 = <u>135</u>
Sapling/Shrub Stratum (Plot size: 15')				FACU species <u>20</u> x 4 = <u>80</u>
1. <i>Cornus alba</i>	35	<input checked="" type="checkbox"/>	FACW	UPL species <u>0</u> x 5 = <u>0</u>
2. <i>Rhamnus cathartica</i>	30	<input checked="" type="checkbox"/>	FAC	Column Totals: <u>170</u> (A) <u>385</u> (B)
3. <i>Rosa setigera</i>	10	<input type="checkbox"/>	FACU	Prevalence Index = B/A = <u>2.265</u>
4. <i>Cornus obliqua</i>	10	<input type="checkbox"/>	FACW	Hydrophytic Vegetation Indicators:
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	<input checked="" type="checkbox"/> Dominance Test is > 50%
7. _____	0	<input type="checkbox"/>	_____	<input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup>
8. _____	0	<input type="checkbox"/>	_____	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
9. _____	0	<input type="checkbox"/>	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
10. _____	0	<input type="checkbox"/>	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
11. _____	0	<input type="checkbox"/>	_____	Definitions of Vegetation Strata:
12. _____	0	<input type="checkbox"/>	_____	
	85 = Total Cover			Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall.
Woody Vine Stratum (Plot size: 30')				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
1. _____	0	<input type="checkbox"/>	_____	Woody vine - All woody vines greater than 3.28 ft in height.
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
	0 = Total Cover			

**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.



[illegible]

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

### Hydric Soil Indicators:

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                 | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)              |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)               | <input checked="" type="checkbox"/> Depleted Matrix (F3)                 |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Muck Mineral (S1)              | <input checked="" type="checkbox"/> Redox Depressions (F8)               |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)             |  |
| <input type="checkbox"/> Sandy Redox (S5)                     |  |
| <input type="checkbox"/> Stripped Matrix (S6)                 |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |  |

### Indicators for Problematic Hydric Soils : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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:** Lincoln Park-Riverbend 138kV Transmission Line**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.**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Microtopographic Relief (D4)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): _____	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Water Table Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): 8		
Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): 0		
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: <u>10'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	0	<input type="checkbox"/>		
2. _____	0	<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
7. _____	0	<input type="checkbox"/>		
0 = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>10'</u> )				
1. _____	0	<input type="checkbox"/>		
2. _____	0	<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
7. _____	0	<input type="checkbox"/>		
0 = Total Cover				
Herb Stratum (Plot size: <u>10'</u> )				
1. <i>Poa palustris</i>	100	<input checked="" type="checkbox"/>	FACW	
2. _____		<input type="checkbox"/>		
3. _____		<input type="checkbox"/>		
4. _____		<input type="checkbox"/>		
5. _____		<input type="checkbox"/>		
6. _____		<input type="checkbox"/>		
7. _____		<input type="checkbox"/>		
8. _____	0	<input type="checkbox"/>		
9. _____	0	<input type="checkbox"/>		
10. _____	0	<input type="checkbox"/>		
11. _____	0	<input type="checkbox"/>		
12. _____	0	<input type="checkbox"/>		
100 = Total Cover				
Woody Vine Stratum (Plot size: <u>10'</u> )				
1. _____	0	<input type="checkbox"/>		
2. _____	0	<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
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 <u>0</u>	x 1 = <u>0</u>
FACW species <u>100</u>	x 2 = <u>200</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>100</u> (A)	<u>200</u> (B)
Prevalence Index = B/A = <u>2.000</u>	

**Hydrophytic Vegetation Indicators:**

☒ Rapid Test for Hydrophytic Vegetation

☒ Dominance Test is > 50%

☒ Prevalence Index is ≤ 3.0<sup>1</sup>

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

☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup> 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 approxs 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.



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

[illegible]

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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:** Lincoln Park-Riverbend 138kV Transmission Line**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.**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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 saturated soils, presence of typha/leersia were confined to the lowland area and wetland conditions did not extend up the adjacent hillsides.	

**Hydrology**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	0
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	2
Saturation Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	0
(includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
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: <u>20'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	0	<input type="checkbox"/>		
2. _____	0	<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
7. _____	0	<input type="checkbox"/>		
<b>= Total Cover</b>				
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u>)</b>				
1. _____	0	<input type="checkbox"/>		
2. _____	0	<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
7. _____	0	<input type="checkbox"/>		
<b>= Total Cover</b>				
<b>Herb Stratum (Plot size: <u>5'</u>)</b>				
1. <u>Typha angustifolia</u>	25	<input checked="" type="checkbox"/>	OBL	
2. <u>Leersia oryzoides</u>	35	<input checked="" type="checkbox"/>	OBL	
3. <u>Agrimonia parviflora</u>	25	<input checked="" type="checkbox"/>	FAC	
4. <u>Onoclea sensibilis</u>	20	<input type="checkbox"/>	FACW	
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
7. _____	0	<input type="checkbox"/>		
8. _____	0	<input type="checkbox"/>		
9. _____	0	<input type="checkbox"/>		
10. _____	0	<input type="checkbox"/>		
11. _____	0	<input type="checkbox"/>		
12. _____	0	<input type="checkbox"/>		
<b>= Total Cover</b>				
<b>Woody Vine Stratum (Plot size: <u>20'</u>)</b>				
1. _____	0	<input type="checkbox"/>		
2. _____	0	<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
<b>= Total Cover</b>				

**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 <u>60</u>	x 1 =	<u>60</u>
FACW species <u>20</u>	x 2 =	<u>40</u>
FAC species <u>25</u>	x 3 =	<u>75</u>
FACU species <u>0</u>	x 4 =	<u>0</u>
UPL species <u>0</u>	x 5 =	<u>0</u>
Column Totals: <u>105</u> (A)		<u>175</u> (B)

Prevalence Index = B/A = 1.667

**Hydrophytic Vegetation Indicators:**

☐ Rapid Test for Hydrophytic Vegetation

☒ Dominance Test is > 50%

☒ Prevalence Index is ≤ 3.0<sup>1</sup>

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

☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup> 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.



[illegible]

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

### Hydric Soil Indicators:

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                 | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)              |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)               | <input checked="" type="checkbox"/> Depleted Matrix (F3)                 |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Muck Mineral (S1)              | <input checked="" type="checkbox"/> Redox Depressions (F8)               |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)             |  |
| <input type="checkbox"/> Sandy Redox (S5)                     |  |
| <input type="checkbox"/> Stripped Matrix (S6)                 |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |  |

### Indicators for Problematic Hydric Soils : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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:** Lincoln Park-Riverbend 138kV Transmission Line**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.**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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 adjacent upland area. Wetland drains to a culvert which extends underneath Oak Street Ext and discharges into hh-JBL-20200107-01.	

**Hydrology**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	4
Saturation Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	0
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>			
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. <i>Salix nigra</i>	10	<input checked="" type="checkbox"/>	OBL
2. _____	0	<input type="checkbox"/>	_____
3. _____	0	<input type="checkbox"/>	_____
4. _____	0	<input type="checkbox"/>	_____
5. _____	0	<input type="checkbox"/>	_____
6. _____	0	<input type="checkbox"/>	_____
7. _____	0	<input type="checkbox"/>	_____
10 = Total Cover			
Sapling/Shrub Stratum (Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Rhamnus cathartica</i>	30	<input checked="" type="checkbox"/>	FAC
2. <i>Fraxinus pennsylvanica</i>	35	<input checked="" type="checkbox"/>	FACW
3. <i>Rosa multiflora</i>	30	<input checked="" type="checkbox"/>	FACU
4. _____	0	<input type="checkbox"/>	_____
5. _____	0	<input type="checkbox"/>	_____
6. _____	0	<input type="checkbox"/>	_____
7. _____	0	<input type="checkbox"/>	_____
95 = Total Cover			
Herb Stratum (Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Epilobium coloratum</i>	25	<input checked="" type="checkbox"/>	OBL
2. <i>Solidago gigantea</i>	30	<input checked="" type="checkbox"/>	FACW
3. <i>Carex vulpinoidea</i>	15	<input type="checkbox"/>	OBL
4. <i>Symphyotrichum lateriflorum</i>	15	<input type="checkbox"/>	FAC
5. _____	0	<input type="checkbox"/>	_____
6. _____	0	<input type="checkbox"/>	_____
7. _____	0	<input type="checkbox"/>	_____
8. _____	0	<input type="checkbox"/>	_____
9. _____	0	<input type="checkbox"/>	_____
10. _____	0	<input type="checkbox"/>	_____
11. _____	0	<input type="checkbox"/>	_____
12. _____	0	<input type="checkbox"/>	_____
85 = Total Cover			
Woody Vine Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Lonicera japonica</i>	15	<input checked="" type="checkbox"/>	FACU
2. _____	0	<input type="checkbox"/>	_____
3. _____	0	<input type="checkbox"/>	_____
4. _____	0	<input type="checkbox"/>	_____
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 <u>50</u>	x 1 = <u>50</u>
FACW species <u>65</u>	x 2 = <u>130</u>
FAC species <u>45</u>	x 3 = <u>135</u>
FACU species <u>45</u>	x 4 = <u>180</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>205</u> (A)	<u>495</u> (B)
Prevalence Index = B/A = <u>2.415</u>	

**Hydrophytic Vegetation Indicators:**

☐ Rapid Test for Hydrophytic Vegetation

☒ Dominance Test is > 50%

☒ Prevalence Index is ≤ 3.0<sup>1</sup>

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

☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup> 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.



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

[illegible]

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

### Hydric Soil Indicators:

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                 | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)              |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)               | <input checked="" type="checkbox"/> Depleted Matrix (F3)                 |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Muck Mineral (S1)              | <input type="checkbox"/> Redox Depressions (F8)                          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)             |  |
| <input type="checkbox"/> Sandy Redox (S5)                     |  |
| <input type="checkbox"/> Stripped Matrix (S6)                 |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |  |

### Indicators for Problematic Hydric Soils : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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 DETERMINATION DATA FORM - Northcentral and Northeast Region****Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line**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.**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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 hydric vegetation.	

**Hydrology**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	0
Saturation Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	0
(includes capillary fringe)		<b>Wetland Hydrology Present?</b>	Yes <input checked="" type="radio"/> No <input type="radio"/>
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: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	0	<input type="checkbox"/>		Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)
2. _____	0	<input type="checkbox"/>		Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3. _____	0	<input type="checkbox"/>		Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
4. _____	0	<input type="checkbox"/>		<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species <u>20</u> x 1 = <u>20</u> FACW species <u>50</u> x 2 = <u>100</u> FAC species <u>50</u> x 3 = <u>150</u> FACU species <u>15</u> x 4 = <u>60</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>135</u> (A) <u>330</u> (B) Prevalence Index = B/A = <u>2.444</u>
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
7. _____	0	<input type="checkbox"/>		
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u>)</b>				
1. <u>Frangula alnus</u>	50	<input checked="" type="checkbox"/>	FAC	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Cornus amomum</u>	30	<input checked="" type="checkbox"/>	FACW	
3. <u>Rosa multiflora</u>	15	<input type="checkbox"/>	FACU	
4. _____	0	<input type="checkbox"/>		
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
7. _____	0	<input type="checkbox"/>		
<b>Herb Stratum (Plot size: <u>5'</u>)</b>				
1. <u>Onoclea sensibilis</u>	20	<input checked="" type="checkbox"/>	FACW	
2. <u>Juncus effusus</u>	10	<input checked="" type="checkbox"/>	OBL	
3. <u>Typha angustifolia</u>	5	<input type="checkbox"/>	OBL	
4. <u>Epilobium coloratum</u>	5	<input type="checkbox"/>	OBL	
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
7. _____	0	<input type="checkbox"/>		
8. _____	0	<input type="checkbox"/>		
9. _____	0	<input type="checkbox"/>		
10. _____	0	<input type="checkbox"/>		
11. _____	0	<input type="checkbox"/>		
12. _____	0	<input type="checkbox"/>		
<b>Woody Vine Stratum (Plot size: <u>30'</u>)</b>				
1. _____	0	<input type="checkbox"/>		<b>Definitions of Vegetation Strata:</b>  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.
2. _____	0	<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>				

**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.



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

[illegible]

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

### Hydric Soil Indicators:

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                 | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)              |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)               | <input checked="" type="checkbox"/> Depleted Matrix (F3)                 |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Muck Mineral (S1)              | <input type="checkbox"/> Redox Depressions (F8)                          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)             |  |
| <input type="checkbox"/> Sandy Redox (S5)                     |  |
| <input type="checkbox"/> Stripped Matrix (S6)                 |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |  |

### Indicators for Problematic Hydric Soils : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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 DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> PEM section of a PEM/PFO wetland located south side of Oak Street Extension across from yellow house. Sample point w-jbl-20200107-06b identifies the PFO portion of the wetland complex located adjacent to the east. Boundary of the wetland was determined in part by topography, presence of saturated soils and the presence of hydrophytic emergent vegetation. Wetland complex extends to the south of the survey corridor to have a hydrologic connection to hh-AEH-20200107-07.	

**Hydrology**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input checked="" type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	8
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	16
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>			
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 ditch along Oak Street Extension. Wetland complex extends south of the survey corridor.			



**VEGETATION - Use scientific names of plant**Sampling Point: w-jbl-20200107-06a

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix nigra</u>	<u>2</u>	<input type="checkbox"/>	<u>OBL</u>	Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)
2. _____	<u>0</u>	<input type="checkbox"/>	_____	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15'</u> )		<u>2</u> = Total Cover		<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species <u>37</u> x 1 = <u>37</u> FACW species <u>40</u> x 2 = <u>80</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>35</u> x 4 = <u>140</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>112</u> (A) <u>257</u> (B)  Prevalence Index = B/A = <u>2.295</u>
1. _____	<u>0</u>	<input type="checkbox"/>	_____	
2. _____	<u>0</u>	<input type="checkbox"/>	_____	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Herb Stratum</b> (Plot size: <u>5'</u> )		<u>0</u> = Total Cover		<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Muhlenbergia frondosa</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
2. <u>Poa pratensis</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. <u>Typha angustifolia</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
4. <u>Epilobium coloratum</u>	<u>15</u>	<input type="checkbox"/>	<u>OBL</u>	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
8. _____	<u>0</u>	<input type="checkbox"/>	_____	
9. _____	<u>0</u>	<input type="checkbox"/>	_____	
10. _____	<u>0</u>	<input type="checkbox"/>	_____	
11. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Woody Vine Stratum</b> (Plot size: <u>15'</u> )		<u>105</u> = Total Cover		<b>Definitions of Vegetation Strata</b>  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.
1. _____	<u>0</u>	<input type="checkbox"/>	_____	
2. _____	<u>0</u>	<input type="checkbox"/>	_____	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
		<u>0</u> = Total Cover		<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.



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

[illegible]

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

### Hydric Soil Indicators:

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                 | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)              |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)               | <input checked="" type="checkbox"/> Depleted Matrix (F3)                 |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Muck Mineral (S1)              | <input type="checkbox"/> Redox Depressions (F8)                          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)             |  |
| <input type="checkbox"/> Sandy Redox (S5)                     |  |
| <input type="checkbox"/> Stripped Matrix (S6)                 |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |  |

## 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)

<sup>3</sup>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 adjacent PFO dominated 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 DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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 ☐

Hydric Soil Present? Yes ☒ No ☐

Wetland Hydrology Present? Yes ☒ No ☐

Is the Sampled Area within a Wetland? 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 Extension across from yellow house. Sample point w-jbl-20200107-06a identifies the PEM portion of the wetland complex located adjacent to the west. Boundary of the wetland was determined in part by topography, presence of saturated soils and the dominant forested hydrophytic vegetation. Wetland complex extends to the south of the survey corridor to have a hydrologic connection to hh-AEH-20200107-07.

**Hydrology****Wetland Hydrology Indicators:**

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

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                        | <input checked="" type="checkbox"/> Water-Stained Leaves (B9)          |
| <input checked="" type="checkbox"/> High Water Table (A2)          | <input type="checkbox"/> Aquatic Fauna (B13)                           |
| <input checked="" type="checkbox"/> Saturation (A3)                | <input type="checkbox"/> Marl Deposits (B15)                           |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift deposits (B3)                       | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)    |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                        |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                    |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   |  |

Secondary Indicators (minimum of 2 required)

- |  |
|--|
| <input type="checkbox"/> Surface Soil Cracks (B6)                  |
| <input type="checkbox"/> Drainage Patterns (B10)                   |
| <input type="checkbox"/> Moss Trim Lines (B16)                     |
| <input type="checkbox"/> Dry Season Water Table (C2)               |
| <input type="checkbox"/> Crayfish Burrows (C8)                     |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Stunted or Stressed Plants (D1)           |
| <input checked="" type="checkbox"/> Geomorphic Position (D2)       |
| <input type="checkbox"/> Shallow Aquitard (D3)                     |
| <input type="checkbox"/> Microtopographic Relief (D4)              |
| <input checked="" type="checkbox"/> FAC-neutral Test (D5)          |

**Field Observations:**

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):		
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	6	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	1	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>

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 ditch along Oak Street Extension. Wetland extends south of the survey corridor.



**Sampling Point:** w-jbl-20200107-06b

Tree Stratum (Plot size: 30' )			Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Acer saccharinum</i>	30	<input checked="" type="checkbox"/>	FACW		
2. <i>Quercus palustris</i>	20	<input checked="" type="checkbox"/>	FACW		
3.	0	<input type="checkbox"/>			
4.	0	<input type="checkbox"/>			
5.	0	<input type="checkbox"/>			
6.	0	<input type="checkbox"/>			
7.	0	<input type="checkbox"/>			
			50 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15' )			Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Rosa multiflora</i>	20	<input checked="" type="checkbox"/>	FACU		
2.	0	<input type="checkbox"/>			
3.	0	<input type="checkbox"/>			
4.	0	<input type="checkbox"/>			
5.	0	<input type="checkbox"/>			
6.	0	<input type="checkbox"/>			
7.	0	<input type="checkbox"/>			
			20 = Total Cover		
Herb Stratum (Plot size: 5' )			Absolute % Cover	Dominant Species?	Indicator Status
1.	0	<input type="checkbox"/>			
2.	0	<input type="checkbox"/>			
3.	0	<input type="checkbox"/>			
4.	0	<input type="checkbox"/>			
5.	0	<input type="checkbox"/>			
6.	0	<input type="checkbox"/>			
7.	0	<input type="checkbox"/>			
8.	0	<input type="checkbox"/>			
9.	0	<input type="checkbox"/>			
10.	0	<input type="checkbox"/>			
11.	0	<input type="checkbox"/>			
12.	0	<input type="checkbox"/>			
			0 = Total Cover		
Woody Vine Stratum (Plot size: 15' )			Absolute % Cover	Dominant Species?	Indicator Status
1.	0	<input type="checkbox"/>			
2.	0	<input type="checkbox"/>			
3.	0	<input type="checkbox"/>			
4.	0	<input type="checkbox"/>			
			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 <span style="float: right;">0</span>	x 1 = <span style="float: right;">0</span>
FACW species <span style="float: right;">50</span>	x 2 = <span style="float: right;">100</span>
FAC species <span style="float: right;">0</span>	x 3 = <span style="float: right;">0</span>
FACU species <span style="float: right;">20</span>	x 4 = <span style="float: right;">80</span>
UPL species <span style="float: right;">0</span>	x 5 = <span style="float: right;">0</span>
Column Totals: <span style="float: right;">70 (A)</span>	<span style="float: right;">180 (B)</span>

Prevalence Index = B/A = 2.571

**Hydrophytic Vegetation Indicators:**

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☒ Prevalence Index is ≤ 3.0<sup>1</sup>

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

☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup> 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.)**



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

[illegible]

<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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)

<sup>3</sup>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 adjacent PEM dominant 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 DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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 Extension 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input checked="" type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): 1	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Water Table Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): 7		
Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): 6		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
<b>Remarks:</b> This wetland includes a non-maintained roadside ditch retaining precipitation and providing the primary and secondary hydrology indicators observed.			



**VEGETATION - Use scientific names of plant**Sampling Point: w-bl-20200108-02a

Tree Stratum (Plot size: <u>30' r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Crataegus crus-galli</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	Number of Dominant Species That are OBL, FACW, or FAC: <u>9</u> (A)  Total Number of Dominant Species Across All Strata: <u>11</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>81.8%</u> (A/B)
2. <u>Rhamnus cathartica</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Sapling/Shrub Stratum (Plot size: <u>15' r</u> )</b>				<b>Prevalence Index worksheet:</b>  Total % Cover of:      Multiply by: OBL species <u>15</u> x 1 = <u>15</u> FACW species <u>25</u> x 2 = <u>50</u> FAC species <u>90</u> x 3 = <u>270</u> FACU species <u>30</u> x 4 = <u>120</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>160</u> (A) <u>455</u> (B)  Prevalence Index = B/A = <u>2.844</u>
1. <u>Rhamnus cathartica</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. <u>Viburnum lentago</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
3. <u>Cornus alba</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
4. <u>Rosa multiflora</u>	<u>5</u>	<input type="checkbox"/>	<u>FACU</u>	
5. <u>Betula alleghaniensis</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Herb Stratum (Plot size: <u>5' r</u> )</b>				
1. <u>Scirpus atrovirens</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
2. <u>Phalaris arundinacea</u>	<u>5</u>	<input type="checkbox"/>	<u>FACW</u>	
3. <u>Epilobium coloratum</u>	<u>5</u>	<input type="checkbox"/>	<u>OBL</u>	
4. <u>Dichanthelium dichotomum</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
5. <u>Symphyotrichum pilosum</u>	<u>5</u>	<input type="checkbox"/>	<u>FACU</u>	
6. <u>Solidago canadensis</u>	<u>5</u>	<input type="checkbox"/>	<u>FACU</u>	
7. <u>Lysimachia nummularia</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<b>Definitions of Vegetation Strata</b>  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.
8. <u>Geum canadense</u>	<u>5</u>	<input type="checkbox"/>	<u>FAC</u>	
9. <u>Lonicera japonica</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
10. _____	<u>0</u>	<input type="checkbox"/>	_____	
11. _____	<u>0</u>	<input type="checkbox"/>	_____	
12. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Woody Vine Stratum (Plot size: <u>30' r</u> )</b>				
1. <u>Lonicera japonica</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
2. _____	<u>0</u>	<input type="checkbox"/>	_____	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b>				
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.



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

[illegible]

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

### Hydric Soil Indicators:

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                 | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)              |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)               | <input checked="" type="checkbox"/> Depleted Matrix (F3)                 |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Muck Mineral (S1)              | <input checked="" type="checkbox"/> Redox Depressions (F8)               |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)             |  |
| <input type="checkbox"/> Sandy Redox (S5)                     |  |
| <input type="checkbox"/> Stripped Matrix (S6)                 |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |  |

### Indicators for Problematic Hydric Soils : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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 DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	4
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	0
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>			
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.			



**VEGETATION - Use scientific names of plant**Sampling Point: w-bl-20200108-02b

Tree Stratum (Plot size: <u>10'x40'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:																																																
1. _____	0	<input type="checkbox"/>	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)																																																
2. _____	0	<input type="checkbox"/>	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)																																																
3. _____	0	<input type="checkbox"/>	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)																																																
4. _____	0	<input type="checkbox"/>	_____																																																	
5. _____	0	<input type="checkbox"/>	_____																																																	
6. _____	0	<input type="checkbox"/>	_____																																																	
7. _____	0	<input type="checkbox"/>	_____																																																	
0 = Total Cover																																																				
Sapling/Shrub Stratum (Plot size: <u>10'x20'</u> )																																																				
1. <u>Rosa multiflora</u>	10	<input checked="" type="checkbox"/>	FACU	<b>Prevalence Index worksheet:</b> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Total % Cover of:</th> <th style="width: 10%;">Multiply by:</th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> </tr> </thead> <tbody> <tr> <td>OBL species</td> <td style="text-align: center;">15</td> <td>x 1 =</td> <td style="text-align: center;">15</td> <td></td> <td></td> </tr> <tr> <td>FACW species</td> <td style="text-align: center;">55</td> <td>x 2 =</td> <td style="text-align: center;">110</td> <td></td> <td></td> </tr> <tr> <td>FAC species</td> <td style="text-align: center;">5</td> <td>x 3 =</td> <td style="text-align: center;">15</td> <td></td> <td></td> </tr> <tr> <td>FACU species</td> <td style="text-align: center;">25</td> <td>x 4 =</td> <td style="text-align: center;">100</td> <td></td> <td></td> </tr> <tr> <td>UPL species</td> <td style="text-align: center;">0</td> <td>x 5 =</td> <td style="text-align: center;">0</td> <td></td> <td></td> </tr> <tr> <td>Column Totals:</td> <td style="text-align: center;">100</td> <td>(A)</td> <td style="text-align: center;">240</td> <td>(B)</td> <td></td> </tr> <tr> <td colspan="4">Prevalence Index = B/A =</td> <td style="text-align: center;">2.400</td> <td></td> </tr> </tbody> </table>	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	
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																																																
2. _____	0	<input type="checkbox"/>	_____																																																	
3. _____	0	<input type="checkbox"/>	_____																																																	
4. _____	0	<input type="checkbox"/>	_____																																																	
5. _____	0	<input type="checkbox"/>	_____																																																	
6. _____	0	<input type="checkbox"/>	_____																																																	
7. _____	0	<input type="checkbox"/>	_____																																																	
10 = Total Cover																																																				
Herb Stratum (Plot size: <u>5' r</u> )																																																				
1. <u>Phalaris arundinacea</u>	50	<input checked="" type="checkbox"/>	FACW	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																																
2. <u>Epilobium anagallidifolium</u>	5	<input type="checkbox"/>	FACW																																																	
3. <u>Scirpus atrovirens</u>	15	<input type="checkbox"/>	OBL																																																	
4. <u>Euthamia graminifolia</u>	5	<input type="checkbox"/>	FAC																																																	
5. <u>Solidago canadensis</u>	15	<input type="checkbox"/>	FACU																																																	
6. _____	0	<input type="checkbox"/>	_____																																																	
7. _____	0	<input type="checkbox"/>	_____																																																	
8. _____	0	<input type="checkbox"/>	_____																																																	
9. _____	0	<input type="checkbox"/>	_____																																																	
10. _____	0	<input type="checkbox"/>	_____																																																	
11. _____	0	<input type="checkbox"/>	_____																																																	
12. _____	0	<input type="checkbox"/>	_____																																																	
90 = Total Cover																																																				
Woody Vine Stratum (Plot size: <u>10'x40'</u> )																																																				
1. _____	0	<input type="checkbox"/>	_____	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.																																																
2. _____	0	<input type="checkbox"/>	_____																																																	
3. _____	0	<input type="checkbox"/>	_____																																																	
4. _____	0	<input type="checkbox"/>	_____																																																	
0 = Total Cover																																																				
0 = Total Cover																																																				
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> Photos included in Appendix D.  Hydrophytic vegetation indicator present as Prevalence Index is less than 3. Vegetation was disturbed 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.				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>																																																

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



**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 : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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 DETERMINATION DATA FORM - Northcentral and Northeast Region**

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/> <b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one required; check all that apply)</b> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<b>Secondary Indicators (minimum of 2 required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): 9		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
<b>Remarks:</b> 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.		



## VEGETATION - Use scientific names of plant

Sampling Point: w-bl-20200108-01

Tree Stratum (Plot size: 30' r )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <i>Ulmus americana</i>	5	<input checked="" type="checkbox"/>	FACW	Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>7</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>57.1%</u> (A/B)
2. <i>Populus tremuloides</i>	5	<input checked="" type="checkbox"/>	FACU	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
10 = Total Cover				<b>Prevalence Index worksheet:</b>  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
<b>Sapling/Shrub Stratum</b> (Plot size: 15' r )				
1. <i>Populus tremuloides</i>	10	<input checked="" type="checkbox"/>	FACU	
2. <i>Rhamnus cathartica</i>	20	<input checked="" type="checkbox"/>	FAC	
3. <i>Rosa multiflora</i>	10	<input checked="" type="checkbox"/>	FACU	
4. <i>Viburnum lentago</i>	5	<input type="checkbox"/>	FAC	
5. <i>Cornus racemosa</i>	10	<input checked="" type="checkbox"/>	FAC	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
55 = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Herb Stratum</b> (Plot size: 5' r )				
1. <i>Epilobium coloratum</i>	5	<input type="checkbox"/>	OBL	
2. <i>Glyceria striata</i>	40	<input checked="" type="checkbox"/>	OBL	
3. <i>Solidago altissima</i>	10	<input type="checkbox"/>	FACU	
4. <i>Geum canadense</i>	5	<input type="checkbox"/>	FAC	
5. <i>Leersia oryzoides</i>	10	<input type="checkbox"/>	OBL	
6. <i>Onoclea sensibilis</i>	5	<input type="checkbox"/>	FACW	
7. _____	_____	<input type="checkbox"/>	_____	
8. _____	_____	<input type="checkbox"/>	_____	
9. _____	_____	<input type="checkbox"/>	_____	
10. _____	_____	<input type="checkbox"/>	_____	
11. _____	0	<input type="checkbox"/>	_____	
12. _____	0	<input type="checkbox"/>	_____	
75 = Total Cover				<b>Definitions of Vegetation Strata</b>  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.
<b>Woody Vine Stratum</b> (Plot size: 30' r )				
1. _____	0	<input type="checkbox"/>	_____	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
0 = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.



[illegible]



## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	0
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>			
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.			



**VEGETATION - Use scientific names of plants**Sampling Point: w-bl-20200107-05

Tree Stratum (Plot size: <u>30' r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	0	<input type="checkbox"/>	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
0 = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species <u>70</u> x 1 = <u>70</u> FACW species <u>15</u> x 2 = <u>30</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>10</u> x 5 = <u>50</u> Column Totals: <u>100</u> (A) <u>165</u> (B)  Prevalence Index = B/A = <u>1.650</u>
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				<b>Definitions of Vegetation Strata</b>  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.
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.



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

[illegible]

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

**Hydric Soil Indicators:**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                 | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)              |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)               | <input checked="" type="checkbox"/> Depleted Matrix (F3)                 |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Muck Mineral (S1)              | <input checked="" type="checkbox"/> Redox Depressions (F8)               |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)             |  |
| <input type="checkbox"/> Sandy Redox (S5)                     |  |
| <input type="checkbox"/> Stripped Matrix (S6)                 |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |  |

Indicators for Problematic Hydric Soils : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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 DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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 ☐

Hydric Soil Present? Yes ☒ No ☐

Wetland Hydrology Present? Yes ☒ No ☐

Is the Sampled Area within a Wetland? 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)**

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                        | <input checked="" type="checkbox"/> Water-Stained Leaves (B9)          |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Fauna (B13)                           |
| <input checked="" type="checkbox"/> Saturation (A3)                | <input type="checkbox"/> Marl Deposits (B15)                           |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift deposits (B3)                       | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)    |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                        |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                    |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   |  |

**Secondary Indicators (minimum of 2 required)**

- |  |
|--|
| <input type="checkbox"/> Surface Soil Cracks (B6)                  |
| <input type="checkbox"/> Drainage Patterns (B10)                   |
| <input type="checkbox"/> Moss Trim Lines (B16)                     |
| <input type="checkbox"/> Dry Season Water Table (C2)               |
| <input type="checkbox"/> Crayfish Burrows (C8)                     |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Stunted or Stressed Plants (D1)           |
| <input checked="" type="checkbox"/> Geomorphic Position (D2)       |
| <input type="checkbox"/> Shallow Aquitard (D3)                     |
| <input type="checkbox"/> Microtopographic Relief (D4)              |
| <input checked="" type="checkbox"/> FAC-neutral Test (D5)          |

**Field Observations:**

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): _____	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): 4	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>

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.



**VEGETATION - Use scientific names of plants**Sampling Point: w-bl-20200107-04

Tree Stratum (Plot size: 30' r )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	0	<input type="checkbox"/>	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
0 = Total Cover				<b>Prevalence Index worksheet:</b> 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
<b>Sapling/Shrub Stratum (Plot size: 15' r )</b>				
1. <i>Cornus alba</i>	15	<input checked="" type="checkbox"/>	FACW	
2. <i>Betula alleghaniensis</i>	5	<input checked="" type="checkbox"/>	FAC	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
0 = Total Cover				
<b>Herb Stratum (Plot size: 5' r )</b>				
1. <i>Cinna arundinacea</i>	15	<input checked="" type="checkbox"/>	FACW	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <i>Juncus effusus</i>	10	<input type="checkbox"/>	OBL	
3. <i>Scirpus atrovirens</i>	30	<input checked="" type="checkbox"/>	OBL	
4. <i>Symphyotrichum racemosum</i>	10	<input type="checkbox"/>	FACW	
5. <i>Epilobium coloratum</i>	5	<input type="checkbox"/>	OBL	
6. <i>Symphyotrichum lateriflorum</i>	5	<input type="checkbox"/>	FAC	
7. <i>Solidago altissima</i>	10	<input type="checkbox"/>	FACU	
8. _____	0	<input type="checkbox"/>	_____	
9. _____	0	<input type="checkbox"/>	_____	
10. _____	0	<input type="checkbox"/>	_____	
11. _____	0	<input type="checkbox"/>	_____	
12. _____	0	<input type="checkbox"/>	_____	
85 = Total Cover				
<b>Woody Vine Stratum (Plot size: 30' r )</b>				
1. _____	0	<input type="checkbox"/>	_____	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.
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
0 = Total Cover				
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>

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



[illegible]



**WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region**

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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.**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/> <b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Water Table Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): 1 Depth (inches): 11 Depth (inches): 6	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
<b>Remarks:</b> Wetland is located in a lower area of flat topography, providing concentration of precipitation. Not isolated, drains to west outside study area.			



**VEGETATION - Use scientific names of plants**Sampling Point: w-bl-20200106-01

Tree Stratum (Plot size: 30' r )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <i>Crataegus crus-galli</i>	3	<input type="checkbox"/>	FAC	Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
2. _____		<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
7. _____	0	<input type="checkbox"/>		
<b>Sapling/Shrub Stratum</b> (Plot size: 15' r )		3 = Total Cover		<b>Prevalence Index worksheet:</b> 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
1. <i>Lonicera morrowii</i>	15	<input checked="" type="checkbox"/>	FACU	
2. <i>Viburnum lentago</i>	30	<input checked="" type="checkbox"/>	FAC	
3. <i>Rhamnus cathartica</i>	10	<input type="checkbox"/>	FAC	
4. <i>Betula alleghaniensis</i>	5	<input type="checkbox"/>	FAC	
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
<b>Herb Stratum</b> (Plot size: 5' r )		60 = Total Cover		<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <i>Glyceria striata</i>	60	<input checked="" type="checkbox"/>	OBL	
2. <i>Festuca rubra</i>	5	<input type="checkbox"/>	FACU	
3. <i>Epilobium coloratum</i>	3	<input type="checkbox"/>	OBL	
4. <i>Solidago altissima</i>	5	<input type="checkbox"/>	FACU	
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
7. _____	0	<input type="checkbox"/>		
8. _____	0	<input type="checkbox"/>		
9. _____	0	<input type="checkbox"/>		
10. _____	0	<input type="checkbox"/>		
11. _____	0	<input type="checkbox"/>		
<b>Woody Vine Stratum</b> (Plot size: 30' r )		73 = Total Cover		
1. _____	0	<input type="checkbox"/>		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.
2. _____	0	<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
		0 = Total Cover		<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.



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

[illegible]

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

### Hydric Soil Indicators:

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                 | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)              |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)               | <input checked="" type="checkbox"/> Depleted Matrix (F3)                 |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input checked="" type="checkbox"/> Redox Dark Surface (F6)              |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Muck Mineral (S1)              | <input checked="" type="checkbox"/> Redox Depressions (F8)               |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)             |  |
| <input type="checkbox"/> Sandy Redox (S5)                     |  |
| <input type="checkbox"/> Stripped Matrix (S6)                 |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |  |

### Indicators for Problematic Hydric Soils : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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 DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>			
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.			



**VEGETATION - Use scientific names of plants**Sampling Point: w-bl-20200107-03

Tree Stratum (Plot size: <u>30' r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <u>Acer rubrum</u>	60	<input checked="" type="checkbox"/>	FAC	Number of Dominant Species That are OBL, FACW, or FAC:	<u>4</u> (A)
2. <u>Quercus palustris</u>	30	<input checked="" type="checkbox"/>	FACW	Total Number of Dominant Species Across All Strata:	<u>4</u> (B)
3. _____	0	<input type="checkbox"/>	_____	Percent of dominant Species That Are OBL, FACW, or FAC:	<u>100.0%</u> (A/B)
4. _____	0	<input type="checkbox"/>	_____		
5. _____	0	<input type="checkbox"/>	_____		
6. _____	0	<input type="checkbox"/>	_____		
7. _____	0	<input type="checkbox"/>	_____		
				<b>Prevalence Index worksheet:</b>	
				Total % Cover of:	Multiply by:
				OBL species <u>0</u>	x 1 = <u>0</u>
				FACW species <u>40</u>	x 2 = <u>80</u>
				FAC species <u>70</u>	x 3 = <u>210</u>
				FACU species <u>3</u>	x 4 = <u>12</u>
				UPL species <u>0</u>	x 5 = <u>0</u>
				Column Totals: <u>113</u> (A)	<u>302</u> (B)
				Prevalence Index = B/A = <u>2.673</u>	
				<b>Hydrophytic Vegetation Indicators:</b>	
				<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation	
				<input checked="" type="checkbox"/> Dominance Test is > 50%	
				<input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup>	
				<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
				<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				<b>Definitions of Vegetation Strata</b>	
				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.	
				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b>					
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.



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

[illegible]

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

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils : <sup>3</sup>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B)	<input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)	<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Dark Surface (S7) (LRR K, L, M)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input checked="" type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		<input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
<input type="checkbox"/> Sandy Redox (S5)		<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Stripped Matrix (S6)		<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)		<input type="checkbox"/> Other (Explain in Remarks)

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

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Remarks:</b> <p>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.</p> <p>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.</p>	



## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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 - Jintown 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 ☐

Wetland Hydrology Present? Yes ☒ No ☐

Is the Sampled Area within a Wetland? 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)**

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Water-Stained Leaves (B9)                     |
| <input checked="" type="checkbox"/> High Water Table (A2)          | <input type="checkbox"/> Aquatic Fauna (B13)                           |
| <input checked="" type="checkbox"/> Saturation (A3)                | <input type="checkbox"/> Marl Deposits (B15)                           |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift deposits (B3)                       | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)    |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                        |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                    |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   |  |

**Secondary Indicators (minimum of 2 required)**

- |  |
|--|
| <input type="checkbox"/> Surface Soil Cracks (B6)                  |
| <input checked="" type="checkbox"/> Drainage Patterns (B10)        |
| <input type="checkbox"/> Moss Trim Lines (B16)                     |
| <input type="checkbox"/> Dry Season Water Table (C2)               |
| <input type="checkbox"/> Crayfish Burrows (C8)                     |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Stunted or Stressed Plants (D1)           |
| <input checked="" type="checkbox"/> Geomorphic Position (D2)       |
| <input type="checkbox"/> Shallow Aquitard (D3)                     |
| <input type="checkbox"/> Microtopographic Relief (D4)              |
| <input checked="" type="checkbox"/> FAC-neutral Test (D5)          |

**Field Observations:**

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):		
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	7	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	5	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>

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.



**VEGETATION - Use scientific names of plants**Sampling Point: w-bl-20200107-02a

Tree Stratum (Plot size: <u>30' r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	0	<input type="checkbox"/>	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
0 = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species <u>65</u> x 1 = <u>65</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>40</u> x 3 = <u>120</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>105</u> (A) <u>185</u> (B)  Prevalence Index = B/A = <u>1.762</u>
0 = Total Cover				
<b>Sapling/Shrub Stratum (Plot size: <u>15' r</u> )</b>				
1. <u>Acer rubrum</u>	15	<input checked="" type="checkbox"/>	FAC	
2. <u>Cornus racemosa</u>	5	<input checked="" type="checkbox"/>	FAC	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
20 = Total Cover				
<b>Herb Stratum (Plot size: <u>5' r</u> )</b>				
1. <u>Carex frankii</u>	5	<input type="checkbox"/>	OBL	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Scirpus atrovirens</u>	60	<input checked="" type="checkbox"/>	OBL	
3. <u>Symphyotrichum lateriflorum</u>	5	<input type="checkbox"/>	FAC	
4. <u>Carex blanda</u>	5	<input type="checkbox"/>	FAC	
5. <u>Dichanthelium dichotomum</u>	10	<input type="checkbox"/>	FAC	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
8. _____	0	<input type="checkbox"/>	_____	
9. _____	0	<input type="checkbox"/>	_____	
10. _____	0	<input type="checkbox"/>	_____	
11. _____	0	<input type="checkbox"/>	_____	
12. _____	0	<input type="checkbox"/>	_____	
85 = Total Cover				
<b>Woody Vine Stratum (Plot size: <u>30' r</u> )</b>				
1. _____	0	<input type="checkbox"/>	_____	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.
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
0 = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.



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

[illegible]

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

**Hydric Soil Indicators:**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                 | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)              |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)               | <input checked="" type="checkbox"/> Depleted Matrix (F3)                 |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Muck Mineral (S1)              | <input checked="" type="checkbox"/> Redox Depressions (F8)               |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)             |  |
| <input type="checkbox"/> Sandy Redox (S5)                     |  |
| <input type="checkbox"/> Stripped Matrix (S6)                 |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |  |

### Indicators for Problematic Hydric Soils : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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 DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input checked="" type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	1
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	6
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	2
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>			
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.			



**VEGETATION - Use scientific names of plants**Sampling Point: w-bl-20200107-02b

Tree Stratum (Plot size: <u>30' r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Acer rubrum</u>	15	<input checked="" type="checkbox"/>	FAC	Number of Dominant Species That are OBL, FACW, or FAC: <u>6</u> (A)  Total Number of Dominant Species Across All Strata: <u>7</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>85.7%</u> (A/B)
2. <u>Ulmus americana</u>	5	<input checked="" type="checkbox"/>	FACW	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
<b>20 = Total Cover</b>				<b>Prevalence Index worksheet:</b>  Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>25</u> x 2 = <u>50</u> FAC species <u>50</u> x 3 = <u>150</u> FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>80</u> (A) <u>220</u> (B)  Prevalence Index = B/A = <u>2.750</u>
<b>55 = Total Cover</b>				
<b>5 = Total Cover</b>				
<b>0 = Total Cover</b>				
<b>0 = Total Cover</b>				
<b>0 = Total Cover</b>				
<b>0 = Total Cover</b>				
<b>0 = Total Cover</b>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>0 = Total Cover</b>				
<b>0 = Total Cover</b>				
<b>0 = Total Cover</b>				
<b>0 = Total Cover</b>				
<b>0 = Total Cover</b>				
<b>0 = Total Cover</b>				
<b>0 = Total Cover</b>				<b>Definitions of Vegetation Strata:</b>  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.
<b>0 = Total Cover</b>				
<b>0 = Total Cover</b>				
<b>0 = Total Cover</b>				
<b>0 = Total Cover</b>				
<b>0 = Total Cover</b>				
<b>0 = Total Cover</b>				
<b>0 = Total Cover</b>				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>0 = Total Cover</b>				
<b>0 = Total Cover</b>				
<b>0 = Total Cover</b>				
<b>0 = Total Cover</b>				
<b>0 = Total Cover</b>				
<b>0 = Total Cover</b>				
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.



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

[illegible]

<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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)

<sup>3</sup>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 DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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.**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	5
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	3
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>			
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 drainage from two wetlands located east of gravel drive through at least 2 culverts.			



**VEGETATION - Use scientific names of plants**Sampling Point: w-bl-20200106-02a

Tree Stratum (Plot size: 30' r )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:																																			
1. <i>Acer rubrum</i>	30	<input checked="" type="checkbox"/>	FAC	Number of Dominant Species That are OBL, FACW, or FAC: <u>5</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>83.3%</u> (A/B)																																			
2. <i>Quercus palustris</i>	30	<input checked="" type="checkbox"/>	FACW																																				
3. _____	0	<input type="checkbox"/>	_____																																				
4. _____	0	<input type="checkbox"/>	_____																																				
5. _____	0	<input type="checkbox"/>	_____																																				
6. _____	0	<input type="checkbox"/>	_____																																				
7. _____	0	<input type="checkbox"/>	_____																																				
<b>60 = Total Cover</b>				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <th style="width: 30%;">Total % Cover of:</th> <th style="width: 10%;">Multiply by:</th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> </tr> <tr> <td>OBL species</td> <td><u>5</u></td> <td>x 1 =</td> <td><u>5</u></td> <td></td> </tr> <tr> <td>FACW species</td> <td><u>40</u></td> <td>x 2 =</td> <td><u>80</u></td> <td></td> </tr> <tr> <td>FAC species</td> <td><u>45</u></td> <td>x 3 =</td> <td><u>135</u></td> <td></td> </tr> <tr> <td>FACU species</td> <td><u>5</u></td> <td>x 4 =</td> <td><u>20</u></td> <td></td> </tr> <tr> <td>UPL species</td> <td><u>0</u></td> <td>x 5 =</td> <td><u>0</u></td> <td></td> </tr> <tr> <td>Column Totals:</td> <td><u>95</u></td> <td>(A)</td> <td><u>240</u></td> <td>(B)</td> </tr> </table> Prevalence Index = B/A = <u>2.526</u>	Total % Cover of:	Multiply by:				OBL species	<u>5</u>	x 1 =	<u>5</u>		FACW species	<u>40</u>	x 2 =	<u>80</u>		FAC species	<u>45</u>	x 3 =	<u>135</u>		FACU species	<u>5</u>	x 4 =	<u>20</u>		UPL species	<u>0</u>	x 5 =	<u>0</u>		Column Totals:	<u>95</u>	(A)	<u>240</u>	(B)
Total % Cover of:	Multiply by:																																						
OBL species	<u>5</u>	x 1 =	<u>5</u>																																				
FACW species	<u>40</u>	x 2 =	<u>80</u>																																				
FAC species	<u>45</u>	x 3 =	<u>135</u>																																				
FACU species	<u>5</u>	x 4 =	<u>20</u>																																				
UPL species	<u>0</u>	x 5 =	<u>0</u>																																				
Column Totals:	<u>95</u>	(A)	<u>240</u>	(B)																																			
<b>60 = Total Cover</b>																																							
<b>Sapling/Shrub Stratum (Plot size: 15' r )</b>																																							
1. <i>Ulmus americana</i>	10	<input checked="" type="checkbox"/>	FACW	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																			
2. <i>Acer rubrum</i>	15	<input checked="" type="checkbox"/>	FAC																																				
3. _____	0	<input type="checkbox"/>	_____																																				
4. _____	0	<input type="checkbox"/>	_____																																				
5. _____	0	<input type="checkbox"/>	_____																																				
6. _____	0	<input type="checkbox"/>	_____																																				
7. _____	0	<input type="checkbox"/>	_____																																				
<b>25 = Total Cover</b>																																							
<b>Herb Stratum (Plot size: 5' r )</b>																																							
1. <i>Carex frankii</i>	5	<input checked="" type="checkbox"/>	OBL	<b>Definitions of Vegetation Strata:</b>  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.          <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>																																			
2. <i>Solidago altissima</i>	5	<input checked="" type="checkbox"/>	FACU																																				
3. _____	0	<input type="checkbox"/>	_____																																				
4. _____	0	<input type="checkbox"/>	_____																																				
5. _____	0	<input type="checkbox"/>	_____																																				
6. _____	0	<input type="checkbox"/>	_____																																				
7. _____	0	<input type="checkbox"/>	_____																																				
8. _____	0	<input type="checkbox"/>	_____																																				
9. _____	0	<input type="checkbox"/>	_____																																				
10. _____	0	<input type="checkbox"/>	_____																																				
11. _____	0	<input type="checkbox"/>	_____																																				
12. _____	0	<input type="checkbox"/>	_____																																				
<b>10 = Total Cover</b>																																							
<b>Woody Vine Stratum (Plot size: 30' r )</b>																																							
1. _____	0	<input type="checkbox"/>	_____																																				
2. _____	0	<input type="checkbox"/>	_____																																				
3. _____	0	<input type="checkbox"/>	_____																																				
4. _____	0	<input type="checkbox"/>	_____																																				
<b>0 = Total Cover</b>																																							

**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.



[illegible]



## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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.**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>			
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 drainage from two wetlands located east of gravel drive through at least 2 culverts.			



**VEGETATION - Use scientific names of plants**Sampling Point: w-bl-20200106-02b

Tree Stratum (Plot size: 30' r )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:																								
1. _____	_____	<input type="checkbox"/>	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>5</u> (A)																								
2. _____	0	<input type="checkbox"/>	_____	Total Number of Dominant Species Across All Strata: <u>5</u> (B)																								
3. _____	0	<input type="checkbox"/>	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																								
4. _____	0	<input type="checkbox"/>	_____																									
5. _____	0	<input type="checkbox"/>	_____																									
6. _____	0	<input type="checkbox"/>	_____																									
7. _____	0	<input type="checkbox"/>	_____																									
0 = Total Cover				<b>Prevalence Index worksheet:</b>																								
Sapling/Shrub Stratum (Plot size: 15' r )				<table style="width: 100%;"> <tr> <td colspan="2">Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species</td> <td>0</td> <td>x 1 = 0</td> </tr> <tr> <td>FACW species</td> <td>15</td> <td>x 2 = 30</td> </tr> <tr> <td>FAC species</td> <td>77</td> <td>x 3 = 231</td> </tr> <tr> <td>FACU species</td> <td>5</td> <td>x 4 = 20</td> </tr> <tr> <td>UPL species</td> <td>0</td> <td>x 5 = 0</td> </tr> <tr> <td>Column Totals:</td> <td>97 (A)</td> <td>281 (B)</td> </tr> <tr> <td colspan="3">Prevalence Index = B/A = <u>2.897</u></td> </tr> </table>	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 = <u>2.897</u>		
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 = <u>2.897</u>																												
1. <i>Acer rubrum</i>	20	<input checked="" type="checkbox"/>	FAC																									
2. <i>Cornus racemosa</i>	10	<input checked="" type="checkbox"/>	FAC																									
3. <i>Cornus alba</i>	10	<input checked="" type="checkbox"/>	FACW																									
4. <i>Smilax glauca</i>	5	<input type="checkbox"/>	FACU																									
5. <i>Rhamnus cathartica</i>	10	<input checked="" type="checkbox"/>	FAC																									
6. _____	0	<input type="checkbox"/>	_____																									
7. _____	0	<input type="checkbox"/>	_____																									
55 = Total Cover																												
Herb Stratum (Plot size: 5' r )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																								
1. <i>Toxicodendron radicans</i>	30	<input checked="" type="checkbox"/>	FAC																									
2. <i>Dichanthelium dichotomum</i>	5	<input type="checkbox"/>	FAC																									
3. <i>Phragmites australis</i>	5	<input type="checkbox"/>	FACW																									
4. <i>Parathelypteris noveboracensis</i>	2	<input type="checkbox"/>	FAC																									
5. _____	0	<input type="checkbox"/>	_____																									
6. _____	0	<input type="checkbox"/>	_____																									
7. _____	0	<input type="checkbox"/>	_____																									
8. _____	0	<input type="checkbox"/>	_____																									
9. _____	0	<input type="checkbox"/>	_____																									
10. _____	0	<input type="checkbox"/>	_____																									
11. _____	0	<input type="checkbox"/>	_____																									
12. _____	0	<input type="checkbox"/>	_____																									
42 = Total Cover				<b>Definitions of Vegetation Strata:</b>  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.																								
Woody Vine Stratum (Plot size: 30' r )																												
1. _____	0	<input type="checkbox"/>	_____																									
2. _____	0	<input type="checkbox"/>	_____																									
3. _____	0	<input type="checkbox"/>	_____																									
4. _____	0	<input type="checkbox"/>	_____																									
0 = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>																								
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.







## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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 - Jintown 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.**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	7
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	3
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>			
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 drainage from two wetlands located east of gravel drive through at least 2 culverts.			



**Sampling Point:** w-bl-20200106-02c

Tree Stratum (Plot size: 30' r )				Dominance Test worksheet:	
Absolute % Cover	Dominant Species?	Indicator Status			
1. _____	0	<input type="checkbox"/>	Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)		
2. _____	0	<input type="checkbox"/>	Total Number of Dominant Species Across All Strata: <u>5</u> (B)		
3. _____	0	<input type="checkbox"/>	Percent of dominant Species That Are OBL, FACW, or FAC: <u>80.0%</u> (A/B)		
4. _____	0	<input type="checkbox"/>			
5. _____	0	<input type="checkbox"/>			
6. _____	0	<input type="checkbox"/>			
7. _____	0	<input type="checkbox"/>			
0 = Total Cover			<b>Prevalence Index worksheet:</b>		
			Total % Cover of: Multiply by:		
Sapling/Shrub Stratum (Plot size: 15' r )			OBL species <u>55</u> x 1 = <u>55</u>		
1. <i>Betula alleghaniensis</i>	15	<input checked="" type="checkbox"/>	FAC	FACW species <u>15</u> x 2 = <u>30</u>	
2. <i>Cornus alba</i>	15	<input checked="" type="checkbox"/>	FACW	FAC species <u>20</u> x 3 = <u>60</u>	
3. <i>Lonicera morrowii</i>	15	<input checked="" type="checkbox"/>	FACU	FACU species <u>15</u> x 4 = <u>60</u>	
4. _____	0	<input type="checkbox"/>		UPL species <u>0</u> x 5 = <u>0</u>	
5. _____	0	<input type="checkbox"/>		Column Totals: <u>105</u> (A) <u>205</u> (B)	
6. _____	0	<input type="checkbox"/>		Prevalence Index = B/A = <u>1.952</u>	
7. _____	0	<input type="checkbox"/>			
45 = Total Cover			<b>Hydrophytic Vegetation Indicators:</b>		
Herb Stratum (Plot size: 5' r )			<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation		
1. <i>Scirpus atrovirens</i>	30	<input checked="" type="checkbox"/>	OBL	<input checked="" type="checkbox"/> Dominance Test is > 50%	
2. <i>Carex frankii</i>	20	<input checked="" type="checkbox"/>	OBL	<input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup>	
3. <i>Agrimonia parviflora</i>	5	<input type="checkbox"/>	FAC	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
4. <i>Scirpus cyperinus</i>	5	<input type="checkbox"/>	OBL	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
5. _____	0	<input type="checkbox"/>		<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
6. _____	0	<input type="checkbox"/>		<b>Definitions of Vegetation Strata:</b>	
7. _____	0	<input type="checkbox"/>		Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
8. _____	0	<input type="checkbox"/>		Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..	
9. _____	0	<input type="checkbox"/>		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
10. _____	0	<input type="checkbox"/>		Woody vine - All woody vines greater than 3.28 ft in height.	
11. _____	0	<input type="checkbox"/>			
12. _____	0	<input type="checkbox"/>			
60 = Total Cover					
Woody Vine Stratum (Plot size: 30'r )					
1. _____	0	<input type="checkbox"/>			
2. _____	0	<input type="checkbox"/>			
3. _____	0	<input type="checkbox"/>			
4. _____	0	<input type="checkbox"/>			
0 = Total Cover					
Remarks: (Include photo numbers here or on a separate sheet.)			Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>		
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.					



[illegible]



## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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 - Jintown 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 ☐

Wetland Hydrology Present? Yes ☒ No ☐

Is the Sampled Area within a Wetland? 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)**

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Water-Stained Leaves (B9)                     |
| <input checked="" type="checkbox"/> High Water Table (A2)          | <input type="checkbox"/> Aquatic Fauna (B13)                           |
| <input checked="" type="checkbox"/> Saturation (A3)                | <input type="checkbox"/> Marl Deposits (B15)                           |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift deposits (B3)                       | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)    |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                        |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                    |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   |  |

**Secondary Indicators (minimum of 2 required)**

- |  |
|--|
| <input type="checkbox"/> Surface Soil Cracks (B6)                  |
| <input checked="" type="checkbox"/> Drainage Patterns (B10)        |
| <input type="checkbox"/> Moss Trim Lines (B16)                     |
| <input type="checkbox"/> Dry Season Water Table (C2)               |
| <input type="checkbox"/> Crayfish Burrows (C8)                     |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Stunted or Stressed Plants (D1)           |
| <input checked="" type="checkbox"/> Geomorphic Position (D2)       |
| <input type="checkbox"/> Shallow Aquitard (D3)                     |
| <input type="checkbox"/> Microtopographic Relief (D4)              |
| <input checked="" type="checkbox"/> FAC-neutral Test (D5)          |

**Field Observations:**

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):		
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	7	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	5	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>

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.



**VEGETATION - Use scientific names of plants**Sampling Point: w-bl-20200107-02a

Tree Stratum (Plot size: <u>30' r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:																												
1. _____	0	<input type="checkbox"/>		Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)																												
2. _____	0	<input type="checkbox"/>		Total Number of Dominant Species Across All Strata: <u>3</u> (B)																												
3. _____	0	<input type="checkbox"/>																														
4. _____	0	<input type="checkbox"/>																														
5. _____	0	<input type="checkbox"/>																														
6. _____	0	<input type="checkbox"/>		Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																												
7. _____	0	<input type="checkbox"/>		<b>Prevalence Index worksheet:</b>																												
0 = Total Cover																																
				<table style="width: 100%;"> <tr> <td colspan="2" style="text-align: center;">Total % Cover of:</td> <td colspan="2" style="text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species</td> <td style="text-align: center;">65</td> <td>x 1 =</td> <td style="text-align: center;">65</td> </tr> <tr> <td>FACW species</td> <td style="text-align: center;">0</td> <td>x 2 =</td> <td style="text-align: center;">0</td> </tr> <tr> <td>FAC species</td> <td style="text-align: center;">40</td> <td>x 3 =</td> <td style="text-align: center;">120</td> </tr> <tr> <td>FACU species</td> <td style="text-align: center;">0</td> <td>x 4 =</td> <td style="text-align: center;">0</td> </tr> <tr> <td>UPL species</td> <td style="text-align: center;">0</td> <td>x 5 =</td> <td style="text-align: center;">0</td> </tr> <tr> <td>Column Totals:</td> <td style="text-align: center;">105</td> <td>(A)</td> <td style="text-align: center;">185 (B)</td> </tr> </table>	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)
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 = <u>1.762</u>																												
				<b>Hydrophytic Vegetation Indicators:</b>																												
				<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																												
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																												
				<b>Definitions of Vegetation Strata</b>																												
				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.																												
				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>																												
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.



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

[illegible]

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

**Hydric Soil Indicators:**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                 | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)              |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)               | <input checked="" type="checkbox"/> Depleted Matrix (F3)                 |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Muck Mineral (S1)              | <input checked="" type="checkbox"/> Redox Depressions (F8)               |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)             |  |
| <input type="checkbox"/> Sandy Redox (S5)                     |  |
| <input type="checkbox"/> Stripped Matrix (S6)                 |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |  |

Indicators for Problematic Hydric Soils : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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 DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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 - Jintown 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 ☐

Wetland Hydrology Present? Yes ☒ No ☐

Is the Sampled Area within a Wetland? 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)**

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Water-Stained Leaves (B9)                     |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Fauna (B13)                           |
| <input checked="" type="checkbox"/> Saturation (A3)                | <input type="checkbox"/> Marl Deposits (B15)                           |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift deposits (B3)                       | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)    |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                        |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                    |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   |  |

**Secondary Indicators (minimum of 2 required)**

- |  |
|--|
| <input type="checkbox"/> Surface Soil Cracks (B6)                  |
| <input checked="" type="checkbox"/> Drainage Patterns (B10)        |
| <input type="checkbox"/> Moss Trim Lines (B16)                     |
| <input type="checkbox"/> Dry Season Water Table (C2)               |
| <input type="checkbox"/> Crayfish Burrows (C8)                     |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Stunted or Stressed Plants (D1)           |
| <input type="checkbox"/> Geomorphic Position (D2)                  |
| <input type="checkbox"/> Shallow Aquitard (D3)                     |
| <input type="checkbox"/> Microtopographic Relief (D4)              |
| <input checked="" type="checkbox"/> FAC-neutral Test (D5)          |

**Field Observations:**

Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): _____	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): 7	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>

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.



**VEGETATION - Use scientific names of plants**Sampling Point: w-bl-20200107-01b

Tree Stratum (Plot size: <u>30' r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	0	<input type="checkbox"/>	_____	Number of Dominant Species That are OBL, FACW, or FAC: _____	4 (A)
2. _____	0	<input type="checkbox"/>	_____	Total Number of Dominant Species Across All Strata: _____	5 (B)
3. _____	0	<input type="checkbox"/>	_____	Percent of dominant Species That Are OBL, FACW, or FAC: _____	80.0% (A/B)
4. _____	0	<input type="checkbox"/>	_____		
5. _____	0	<input type="checkbox"/>	_____		
6. _____	0	<input type="checkbox"/>	_____		
7. _____	0	<input type="checkbox"/>	_____		
0 = Total Cover					
<b>Sapling/Shrub Stratum (Plot size: <u>15' r</u> )</b>					
1. <u>Betula alleghaniensis</u>	25	<input checked="" type="checkbox"/>	FAC	OBL species _____	50 x 1 = 50
2. <u>Fagus grandifolia</u>	5	<input type="checkbox"/>	FACU	FACW species _____	40 x 2 = 80
3. <u>Rubus occidentalis</u>	5	<input type="checkbox"/>	UPL	FAC species _____	25 x 3 = 75
4. <u>Rubus allegheniensis</u>	10	<input checked="" type="checkbox"/>	FACU	FACU species _____	30 x 4 = 120
5. <u>Smilax glauca</u>	5	<input type="checkbox"/>	FACU	UPL species _____	5 x 5 = 25
6. _____	0	<input type="checkbox"/>	_____	Column Totals: _____	(A) 150 (B) 350
7. _____	0	<input type="checkbox"/>	_____	Prevalence Index = B/A = <u>2.333</u>	
50 = Total Cover					
<b>Herb Stratum (Plot size: <u>5' r</u> )</b>					
1. <u>Cinna arundinacea</u>	30	<input checked="" type="checkbox"/>	FACW	<b>Hydrophytic Vegetation Indicators:</b>	
2. <u>Scirpus cyperinus</u>	20	<input checked="" type="checkbox"/>	OBL	<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation	
3. <u>Persicaria sagittata</u>	20	<input checked="" type="checkbox"/>	OBL	<input checked="" type="checkbox"/> Dominance Test is > 50%	
4. <u>Solidago canadensis</u>	10	<input type="checkbox"/>	FACU	<input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup>	
5. <u>Panicum dichotomiflorum</u>	5	<input type="checkbox"/>	FACW	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
6. <u>Epilobium coloratum</u>	10	<input type="checkbox"/>	OBL	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
7. <u>Symphytotrichum racemosum</u>	5	<input type="checkbox"/>	FACW	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
8. _____	0	<input type="checkbox"/>	_____	<b>Definitions of Vegetation Strata</b>  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.	
9. _____	0	<input type="checkbox"/>	_____		
10. _____	0	<input type="checkbox"/>	_____		
11. _____	0	<input type="checkbox"/>	_____		
12. _____	0	<input type="checkbox"/>	_____		
100 = Total Cover					
<b>Woody Vine Stratum (Plot size: <u>30' r</u> )</b>					
1. _____	0	<input type="checkbox"/>	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
2. _____	0	<input type="checkbox"/>	_____		
3. _____	0	<input type="checkbox"/>	_____		
4. _____	0	<input type="checkbox"/>	_____		
0 = Total Cover					
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.



[illegible]



## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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 - Jintown 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**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input checked="" type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input checked="" type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>			
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.			



**Sampling Point:** w-bl-20200107-01c

Northcentral and Northeast Region - Version 2.0



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

[illegible]

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

### Hydric Soil Indicators:

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                 | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)              |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)               | <input type="checkbox"/> Depleted Matrix (F3)                            |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input checked="" type="checkbox"/> Redox Dark Surface (F6)              |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Muck Mineral (S1)              | <input checked="" type="checkbox"/> Redox Depressions (F8)               |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)             |  |
| <input type="checkbox"/> Sandy Redox (S5)                     |  |
| <input type="checkbox"/> Stripped Matrix (S6)                 |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |  |

## 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)

<sup>3</sup>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 DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	

**Remarks: (Explain alternative procedures here or in a separate report.)**

Wetland is located west of an existing roadway and surrounded by commercial 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 herbeaceous vegetation, particularly *Carex vulpinoidea*.

**Hydrology**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>
<b>Primary Indicators (minimum of one required; check all that apply)</b>		
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input checked="" type="checkbox"/> FAC-neutral Test (D5)

**Field Observations:**

Surface Water Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): 0.25	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): 2	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): 0	

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

**Remarks:**

Wetland receives hydrology from precipitation and runoff from the roadway.



**VEGETATION - Use scientific names of plant**Sampling Point: w-ah-20200107-09a

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	0	<input type="checkbox"/>	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
0 = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species <u>55</u> x 1 = <u>55</u> FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species <u>25</u> x 4 = <u>100</u> UPL species <u>5</u> x 5 = <u>25</u> Column Totals: <u>100</u> (A) <u>215</u> (B)  Prevalence Index = B/A = <u>2.150</u>
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				<b>Definitions of Vegetation Strata</b>  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.
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes ●      No ○
0 = Total Cover				
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> Vegetation was disturbed 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.



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

[illegible]

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

### Hydric Soil Indicators:

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                 | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)              |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)               | <input checked="" type="checkbox"/> Depleted Matrix (F3)                 |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Muck Mineral (S1)              | <input type="checkbox"/> Redox Depressions (F8)                          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)             |  |
| <input type="checkbox"/> Sandy Redox (S5)                     |  |
| <input type="checkbox"/> Stripped Matrix (S6)                 |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |  |

Indicators for Problematic Hydric Soils : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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 classified this area as a wetland. The wetland is represented by PFO and PEM wetland components.



## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> Wetland is located west of an existing roadway on either side of w-aeh-20200107-09a and surrounded by commercial 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 <i>Quercus palustris</i> and <i>Acer negundo</i> .	

**Hydrology**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	0.25
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	5
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	0
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Wetland receives hydrology from precipitation and runoff from the roadway.			



**VEGETATION - Use scientific names of plant**Sampling Point: w-ah-20200107-09b

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Quercus palustris</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	Number of Dominant Species That are OBL, FACW, or FAC: <u>5</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. <u>Ulmus rubra</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
3. <u>Acer negundo</u>	<u>5</u>	<input type="checkbox"/>	<u>FAC</u>	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Sapling/Shrub Stratum (Plot size: <u>15ft</u> )</b>				<b>Prevalence Index worksheet:</b>  Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>50</u> x 2 = <u>100</u> FAC species <u>40</u> x 3 = <u>120</u> FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>95</u> (A) <u>240</u> (B)  Prevalence Index = B/A = <u>2.526</u>
1. <u>Acer negundo</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. <u>Quercus palustris</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
3. <u>Celtis occidentalis</u>	<u>5</u>	<input type="checkbox"/>	<u>FAC</u>	
4. <u>Rosa multiflora</u>	<u>5</u>	<input type="checkbox"/>	<u>FACU</u>	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Herb Stratum (Plot size: <u>5ft</u> )</b>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Phalaris arundinacea</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
2. _____	<u>0</u>	<input type="checkbox"/>	_____	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
8. _____	<u>0</u>	<input type="checkbox"/>	_____	
9. _____	<u>0</u>	<input type="checkbox"/>	_____	
10. _____	<u>0</u>	<input type="checkbox"/>	_____	
11. _____	<u>0</u>	<input type="checkbox"/>	_____	
12. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Woody Vine Stratum (Plot size: <u>30ft</u> )</b>				<b>Definitions of Vegetation Strata</b>  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.
1. _____	<u>0</u>	<input type="checkbox"/>	_____	
2. _____	<u>0</u>	<input type="checkbox"/>	_____	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b>				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
Vegetation was disturbed 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.



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

[illegible]

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

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils : <sup>3</sup>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Dark Surface (S7) (LRR K, L, M)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B)	
<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)	
<input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

**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 classified this area as a wetland. The wetland is represented by PFO and PEM wetland components.



## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> Wetland is located west of an existing roadway and surrounded by commercial 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Wetland receives hydrology from precipitation and runoff from the roadway.			



**VEGETATION - Use scientific names of plant**Sampling Point: w-ah-20200107-10a

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Populus deltoides</u>	5	<input checked="" type="checkbox"/>	FAC	Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____	0	<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
7. _____	0	<input type="checkbox"/>		
<b>Sapling/Shrub Stratum (Plot size: <u>15ft</u> )</b>				<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species <u>10</u> x 1 = <u>10</u> FACW species <u>80</u> x 2 = <u>160</u> FAC species <u>45</u> x 3 = <u>135</u> FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>140</u> (A) <u>325</u> (B)  Prevalence Index = B/A = <u>2.321</u>
1. <u>Populus deltoides</u>	40	<input checked="" type="checkbox"/>	FAC	
2. _____	0	<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
<b>Herb Stratum (Plot size: <u>5ft</u> )</b>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Phalaris arundinacea</u>	80	<input checked="" type="checkbox"/>	FACW	
2. <u>Carex vulpinoidea</u>	10	<input type="checkbox"/>	OBL	
3. <u>Solidago canadensis</u>	5	<input type="checkbox"/>	FACU	
4. _____	0	<input type="checkbox"/>		
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
7. _____	0	<input type="checkbox"/>		
8. _____	0	<input type="checkbox"/>		
9. _____	0	<input type="checkbox"/>		
10. _____	0	<input type="checkbox"/>		
11. _____	0	<input type="checkbox"/>		
<b>Woody Vine Stratum (Plot size: <u>30ft</u> )</b>				<b>Definitions of Vegetation Strata</b>  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.
1. _____	0	<input type="checkbox"/>		
2. _____	0	<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b>				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
Vegetation was disturbed 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.



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

[illegible]

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

### Hydric Soil Indicators:

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                 | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)              |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)               | <input checked="" type="checkbox"/> Depleted Matrix (F3)                 |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Muck Mineral (S1)              | <input type="checkbox"/> Redox Depressions (F8)                          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)             |  |
| <input type="checkbox"/> Sandy Redox (S5)                     |  |
| <input type="checkbox"/> Stripped Matrix (S6)                 |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |  |

## 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)

<sup>3</sup>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 classified this area as a wetland. The wetland is represented by PFO and PSS wetland components.



## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	

**Remarks: (Explain alternative procedures here or in a separate report.)**

Wetland is located west of an existing roadway and surrounded by commercial 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>
<b>Primary Indicators (minimum of one required; check all that apply)</b>		
<input checked="" type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input checked="" type="checkbox"/> FAC-neutral Test (D5)

**Field Observations:**

Surface Water Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	0.25	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	14	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	12	

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

**Remarks:**

Wetland receives hydrology from precipitation and runoff from the roadway.



**VEGETATION - Use scientific names of plant**Sampling Point: w-ah-20200107-10b

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Quercus palustris</u>	<u>40</u>	<input checked="" type="checkbox"/>	FACW	Number of Dominant Species That are OBL, FACW, or FAC: <u>5</u> (A)  Total Number of Dominant Species Across All Strata: <u>7</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>71.4%</u> (A/B)
2. <u>Populus balsamifera</u>	<u>25</u>	<input checked="" type="checkbox"/>	FACW	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>90</u> x 2 = <u>180</u> FAC species <u>45</u> x 3 = <u>135</u> FACU species <u>15</u> x 4 = <u>60</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>150</u> (A) <u>375</u> (B)  Prevalence Index = B/A = <u>2.500</u>
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Sapling/Shrub Stratum (Plot size: <u>15ft</u> )</b>			65 = Total Cover	
1. <u>Rhamnus cathartica</u>	<u>40</u>	<input checked="" type="checkbox"/>	FAC	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2. <u>Populus balsamifera</u>	<u>15</u>	<input checked="" type="checkbox"/>	FACW	
3. <u>Quercus palustris</u>	<u>10</u>	<input type="checkbox"/>	FACW	
4. <u>Rosa multiflora</u>	<u>5</u>	<input type="checkbox"/>	FACU	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
8. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Herb Stratum (Plot size: <u>5ft</u> )</b>			70 = Total Cover	<b>Definitions of Vegetation Strata</b>  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.
1. <u>Juncus tenuis</u>	<u>5</u>	<input checked="" type="checkbox"/>	FAC	
2. <u>Rosa multiflora</u>	<u>5</u>	<input checked="" type="checkbox"/>	FACU	
3. <u>Solidago canadensis</u>	<u>5</u>	<input checked="" type="checkbox"/>	FACU	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
8. _____	<u>0</u>	<input type="checkbox"/>	_____	<b>Remarks: (Include photo numbers here or on a separate sheet.)</b>  Vegetation was disturbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the wetland area. Photographs available in Appendix D.
9. _____	<u>0</u>	<input type="checkbox"/>	_____	
10. _____	<u>0</u>	<input type="checkbox"/>	_____	
11. _____	<u>0</u>	<input type="checkbox"/>	_____	
12. _____	<u>0</u>	<input type="checkbox"/>	_____	<b>Woody Vine Stratum (Plot size: <u>30ft</u> )</b> 15 = Total Cover 1. _____ <u>0</u> <input type="checkbox"/> 2. _____ <u>0</u> <input type="checkbox"/> 3. _____ <u>0</u> <input type="checkbox"/> 4. _____ <u>0</u> <input type="checkbox"/> 0 = Total Cover

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



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

[illegible]

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

### Hydric Soil Indicators:

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                 | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)              |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)               | <input checked="" type="checkbox"/> Depleted Matrix (F3)                 |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Muck Mineral (S1)              | <input type="checkbox"/> Redox Depressions (F8)                          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)             |  |
| <input type="checkbox"/> Sandy Redox (S5)                     |  |
| <input type="checkbox"/> Stripped Matrix (S6)                 |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |  |

## 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)

<sup>3</sup>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 classified this area as a wetland. The wetland is represented by PFO and PSS wetland components.



## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> PFO wetland was within a low area north of McCartney Rd (US Route 422) and west of commercial 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 <i>Quercus palustris</i> .	

**Hydrology**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	3
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	0
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>			
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.			



**VEGETATION - Use scientific names of plant**Sampling Point: w-ah-20200107-02

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:																																																
1. <u>Quercus palustris</u>	70	<input checked="" type="checkbox"/>	FACW	Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																																																
2. <u>Acer rubrum</u>	5	<input type="checkbox"/>	FAC																																																	
3. _____	0	<input type="checkbox"/>	_____																																																	
4. _____	0	<input type="checkbox"/>	_____																																																	
5. _____	0	<input type="checkbox"/>	_____																																																	
6. _____	0	<input type="checkbox"/>	_____																																																	
7. _____	0	<input type="checkbox"/>	_____																																																	
<b>75 = Total Cover</b>				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <td style="width: 30%;">Total % Cover of:</td> <td style="width: 10%;"></td> <td style="width: 10%;">Multiply by:</td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td>OBL species</td> <td style="text-align: center;">0</td> <td>x 1 =</td> <td style="text-align: center;">0</td> <td></td> <td></td> </tr> <tr> <td>FACW species</td> <td style="text-align: center;">77</td> <td>x 2 =</td> <td style="text-align: center;">154</td> <td></td> <td></td> </tr> <tr> <td>FAC species</td> <td style="text-align: center;">10</td> <td>x 3 =</td> <td style="text-align: center;">30</td> <td></td> <td></td> </tr> <tr> <td>FACU species</td> <td style="text-align: center;">0</td> <td>x 4 =</td> <td style="text-align: center;">0</td> <td></td> <td></td> </tr> <tr> <td>UPL species</td> <td style="text-align: center;">0</td> <td>x 5 =</td> <td style="text-align: center;">0</td> <td></td> <td></td> </tr> <tr> <td>Column Totals:</td> <td style="text-align: center;">87</td> <td>(A)</td> <td style="text-align: center;">184</td> <td>(B)</td> <td></td> </tr> <tr> <td colspan="6">Prevalence Index = B/A = <u>2.115</u></td> </tr> </table>	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 = <u>2.115</u>					
Total % Cover of:		Multiply by:																																																		
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<b>10 = Total Cover</b>																																																				
<b>Hydrophytic Vegetation Indicators:</b>																																																				
<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																																																				
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																																				
<b>Definitions of Vegetation Strata</b>																																																				
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.																																																				
<b>2 = Total Cover</b>																																																				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>																																																				
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b>																																																				
Vegetation was disturbed 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.



[illegible]



## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	1
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	2
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	0
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>			
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 commercial and roadways.			

**VEGETATION - Use scientific names of plant**Sampling Point: w-ah-20200107-03a

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Fraxinus pennsylvanica</u>	5	<input checked="" type="checkbox"/>	FACW	Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____	0	<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
7. _____	0	<input type="checkbox"/>		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15ft</u> )	5 = Total Cover			<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species <u>27</u> x 1 = <u>27</u> FACW species <u>65</u> x 2 = <u>130</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>92</u> (A) <u>157</u> (B)  Prevalence Index = B/A = <u>1.707</u>
1. _____	0	<input type="checkbox"/>		
2. _____	0	<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
<b>Herb Stratum</b> (Plot size: <u>5ft</u> )	0 = Total Cover			<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> <b>Rapid Test for Hydrophytic Vegetation</b> <input checked="" type="checkbox"/> <b>Dominance Test is &gt; 50%</b> <input checked="" type="checkbox"/> <b>Prevalence Index is ≤ 3.0<sup>1</sup></b> <input type="checkbox"/> <b>Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</b> <input type="checkbox"/> <b>Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</b>  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Onoclea sensibilis</u>	35	<input checked="" type="checkbox"/>	FACW	
2. <u>Poa palustris</u>	25	<input checked="" type="checkbox"/>	FACW	
3. <u>Carex vulpinoidea</u>	20	<input checked="" type="checkbox"/>	OBL	
4. <u>Typha angustifolia</u>	5	<input type="checkbox"/>	OBL	
5. <u>Scirpus atrovirens</u>	2	<input type="checkbox"/>	OBL	
6. _____	0	<input type="checkbox"/>		
7. _____	0	<input type="checkbox"/>		
8. _____	0	<input type="checkbox"/>		
9. _____	0	<input type="checkbox"/>		
10. _____	0	<input type="checkbox"/>		
11. _____	0	<input type="checkbox"/>		
<b>Woody Vine Stratum</b> (Plot size: <u>30ft</u> )	87 = Total Cover			<b>Definitions of Vegetation Strata</b>  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.
1. _____	0	<input type="checkbox"/>		
2. _____	0	<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
	0 = Total Cover			<b>Hydrophytic Vegetation Present?</b> Yes ●      No ○
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> Vegetation was disturbed 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.



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

[illegible]

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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)

<sup>3</sup>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 classified 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 DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input checked="" type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	1
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	6
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	0
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>			
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 commercial and roadways.			



**VEGETATION - Use scientific names of plant**Sampling Point: w-ah-20200107-03b

Tree Stratum (Plot size: 30ft )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Fraxinus pennsylvanica</u>	35	<input checked="" type="checkbox"/>	FACW	Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. <u>Quercus palustris</u>	10	<input checked="" type="checkbox"/>	FACW	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species <u>25</u> x 1 = <u>25</u> FACW species <u>75</u> x 2 = <u>150</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>175</u> (B)  Prevalence Index = B/A = <u>1.750</u>
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
45 = Total Cover				
Sapling/Shrub Stratum (Plot size: 15ft )				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> <b>Rapid Test for Hydrophytic Vegetation</b> <input checked="" type="checkbox"/> <b>Dominance Test is &gt; 50%</b> <input checked="" type="checkbox"/> <b>Prevalence Index is ≤ 3.0</b> <sup>1</sup> <input type="checkbox"/> <b>Morphological Adaptations</b> <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> <b>Problematic Hydrophytic Vegetation</b> <sup>1</sup> (Explain)
1. _____	0	<input type="checkbox"/>	_____	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
0 = Total Cover			<b>Definitions of Vegetation Strata</b>  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.	
Herb Stratum (Plot size: 5ft )				
1. <u>Onoclea sensibilis</u>	20	<input checked="" type="checkbox"/>		FACW
2. <u>Typha angustifolia</u>	15	<input checked="" type="checkbox"/>		OBL
3. <u>Poa paludigena</u>	10	<input type="checkbox"/>	OBL	
4. <u>Verbesina alternifolia</u>	10	<input type="checkbox"/>	FACW	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
8. _____	0	<input type="checkbox"/>	_____	<b>Remarks: (Include photo numbers here or on a separate sheet.)</b>  Vegetation was disturbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the wetland area. Photographs are located in Appendix D.
9. _____	0	<input type="checkbox"/>	_____	
10. _____	0	<input type="checkbox"/>	_____	
11. _____	0	<input type="checkbox"/>	_____	
12. _____	0	<input type="checkbox"/>	_____	<b>Woody Vine Stratum</b> (Plot size: 30ft )
55 = Total Cover				
1. _____	0	<input type="checkbox"/>	_____	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
4. _____	0	<input type="checkbox"/>	_____	
0 = Total Cover				

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

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

[illegible]

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

**Hydric Soil Indicators:**

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                 | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)              |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)               | <input checked="" type="checkbox"/> Depleted Matrix (F3)                 |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Muck Mineral (S1)              | <input type="checkbox"/> Redox Depressions (F8)                          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)             |  |
| <input type="checkbox"/> Sandy Redox (S5)                     |  |
| <input type="checkbox"/> Stripped Matrix (S6)                 |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |  |

### Indicators for Problematic Hydric Soils : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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 classified 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 DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> The wetland is located within a low area located south of McCartney Rd and west of Lettie St. and a commercial 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	0.5
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	6
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	0
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: The wetland receives hydrology from precipitation, runoff from surrounding commercial properties and two ephemeral streams.			

**VEGETATION - Use scientific names of plant**Sampling Point: w-ah-20200107-04

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	0	<input type="checkbox"/>	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
0 = Total Cover				<b>Prevalence Index worksheet:</b>  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
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				<b>Definitions of Vegetation Strata</b>  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.
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
0 = Total Cover				
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> Vegetation was disturbed 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.



# SOH

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>			
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.			



**VEGETATION - Use scientific names of plant**Sampling Point: w-ah-20200107-05

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	0	<input type="checkbox"/>	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15ft</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species <u>40</u> x 1 = <u>40</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>2</u> x 3 = <u>6</u> FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>67</u> (A) <u>106</u> (B)  Prevalence Index = B/A = <u>1.582</u>
1. <u>Rosa multiflora</u>	5	<input checked="" type="checkbox"/>	FACU	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Herb Stratum</b> (Plot size: <u>5ft</u> )				
1. <u>Carex vulpinoidea</u>	35	<input checked="" type="checkbox"/>	OBL	
2. <u>Phalaris arundinacea</u>	20	<input checked="" type="checkbox"/>	FACW	
3. <u>Juncus effusus</u>	5	<input type="checkbox"/>	OBL	
4. <u>Rumex crispus</u>	2	<input type="checkbox"/>	FAC	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
8. _____	0	<input type="checkbox"/>	_____	
9. _____	0	<input type="checkbox"/>	_____	
10. _____	0	<input type="checkbox"/>	_____	
11. _____	0	<input type="checkbox"/>	_____	
12. _____	0	<input type="checkbox"/>	_____	
<b>Woody Vine Stratum</b> (Plot size: <u>30ft</u> )				<b>Definitions of Vegetation Strata</b>  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.
1. _____	0	<input type="checkbox"/>	_____	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> Vegetation was disturbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the wetland area. Photographs are located in Appendix D.				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>

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

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

[illegible]

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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 classified this area as a wetland. The wetland is represented by PEM wetland components.



## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> Upland was taken southeast of the existing wetland.	

**Hydrology**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: No wetland hydrology was present.			

**VEGETATION - Use scientific names of plant**Sampling Point: upl-aeh-20200107-06

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <u>Ulmus rubra</u>	<u>5</u>	<input checked="" type="checkbox"/>	FAC	Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)	
2. <u>Acer rubrum</u>	<u>5</u>	<input checked="" type="checkbox"/>	FAC	Total Number of Dominant Species Across All Strata: <u>7</u> (B)	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>42.9%</u> (A/B)	
4. _____	<u>0</u>	<input type="checkbox"/>	_____		
5. _____	<u>0</u>	<input type="checkbox"/>	_____		
6. _____	<u>0</u>	<input type="checkbox"/>	_____		
7. _____	<u>0</u>	<input type="checkbox"/>	_____		
				<b>Prevalence Index worksheet:</b>	
Sapling/Shrub Stratum (Plot size: <u>15ft</u> )				Total % Cover of: _____ Multiply by: _____	
1. <u>Rosa multiflora</u>	<u>25</u>	<input checked="" type="checkbox"/>	FACU	OBL species <u>0</u>	x 1 = <u>0</u>
2. <u>Acer rubrum</u>	<u>15</u>	<input checked="" type="checkbox"/>	FAC	FACW species <u>0</u>	x 2 = <u>0</u>
3. <u>Ulmus rubra</u>	<u>5</u>	<input type="checkbox"/>	FAC	FAC species <u>30</u>	x 3 = <u>90</u>
4. _____	<u>0</u>	<input type="checkbox"/>	_____	FACU species <u>65</u>	x 4 = <u>260</u>
5. _____	<u>0</u>	<input type="checkbox"/>	_____	UPL species <u>0</u>	x 5 = <u>0</u>
6. _____	<u>0</u>	<input type="checkbox"/>	_____	Column Totals: <u>95</u> (A)	<u>350</u> (B)
7. _____	<u>0</u>	<input type="checkbox"/>	_____	Prevalence Index = B/A = <u>3.684</u>	
Herb Stratum (Plot size: <u>5ft</u> )				<b>Hydrophytic Vegetation Indicators:</b>	
1. <u>Solidago canadensis</u>	<u>15</u>	<input checked="" type="checkbox"/>	FACU	<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation	
2. <u>Glechoma hederacea</u>	<u>15</u>	<input checked="" type="checkbox"/>	FACU	<input type="checkbox"/> Dominance Test is > 50%	
3. <u>Poa pratensis</u>	<u>10</u>	<input checked="" type="checkbox"/>	FACU	<input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup>	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	<b>Definitions of Vegetation Strata</b>	
8. _____	<u>0</u>	<input type="checkbox"/>	_____	Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
9. _____	<u>0</u>	<input type="checkbox"/>	_____	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall.	
10. _____	<u>0</u>	<input type="checkbox"/>	_____	Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
11. _____	<u>0</u>	<input type="checkbox"/>	_____	Woody vine - All woody vines greater than 3.28 ft in height.	
12. _____	<u>0</u>	<input type="checkbox"/>	_____		
Woody Vine Stratum (Plot size: <u>30ft</u> )					
1. _____	<u>0</u>	<input type="checkbox"/>	_____		
2. _____	<u>0</u>	<input type="checkbox"/>	_____		
3. _____	<u>0</u>	<input type="checkbox"/>	_____		
4. _____	<u>0</u>	<input type="checkbox"/>	_____		
				<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.



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

[illegible]

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 :

- ☐ 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)

<sup>3</sup>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 DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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: <i>Typha angustifolia</i> and <i>Carex vulpinoidea</i> .	

**Hydrology**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	4
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	1
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>			
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.			



**VEGETATION - Use scientific names of plant**Sampling Point: w-ah-20200107-07

Tree Stratum (Plot size: 30ft )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:																					
1. _____	0	<input type="checkbox"/>	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>75.0%</u> (A/B)																					
2. _____	0	<input type="checkbox"/>	_____																						
3. _____	0	<input type="checkbox"/>	_____																						
4. _____	0	<input type="checkbox"/>	_____																						
5. _____	0	<input type="checkbox"/>	_____																						
6. _____	0	<input type="checkbox"/>	_____																						
7. _____	0	<input type="checkbox"/>	_____																						
<b>Sapling/Shrub Stratum</b> (Plot size: 15ft )				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <td colspan="2">Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species</td> <td><u>55</u></td> <td>x 1 = <u>55</u></td> </tr> <tr> <td>FACW species</td> <td><u>15</u></td> <td>x 2 = <u>30</u></td> </tr> <tr> <td>FAC species</td> <td><u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species</td> <td><u>15</u></td> <td>x 4 = <u>60</u></td> </tr> <tr> <td>UPL species</td> <td><u>5</u></td> <td>x 5 = <u>25</u></td> </tr> <tr> <td>Column Totals:</td> <td><u>95</u> (A)</td> <td><u>185</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>1.947</u>	Total % Cover of:		Multiply by:	OBL species	<u>55</u>	x 1 = <u>55</u>	FACW species	<u>15</u>	x 2 = <u>30</u>	FAC species	<u>5</u>	x 3 = <u>15</u>	FACU species	<u>15</u>	x 4 = <u>60</u>	UPL species	<u>5</u>	x 5 = <u>25</u>	Column Totals:	<u>95</u> (A)	<u>185</u> (B)
Total % Cover of:		Multiply by:																							
OBL species	<u>55</u>	x 1 = <u>55</u>																							
FACW species	<u>15</u>	x 2 = <u>30</u>																							
FAC species	<u>5</u>	x 3 = <u>15</u>																							
FACU species	<u>15</u>	x 4 = <u>60</u>																							
UPL species	<u>5</u>	x 5 = <u>25</u>																							
Column Totals:	<u>95</u> (A)	<u>185</u> (B)																							
<b>Herb Stratum</b> (Plot size: 5ft )																									
1. <i>Typha angustifolia</i>	25	<input checked="" type="checkbox"/>	OBL																						
2. <i>Carex vulpinoidea</i>	20	<input checked="" type="checkbox"/>	OBL																						
3. <i>Symphytotrichum ericoides</i>	15	<input checked="" type="checkbox"/>	FACU																						
4. <i>Elymus riparius</i>	15	<input checked="" type="checkbox"/>	FACW																						
5. <i>Juncus effusus</i>	10	<input type="checkbox"/>	OBL																						
6. <i>Daucus carota</i>	5	<input type="checkbox"/>	UPL																						
7. <i>Rumex crispus</i>	5	<input type="checkbox"/>	FAC																						
8. _____	0	<input type="checkbox"/>	_____	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																					
9. _____	0	<input type="checkbox"/>	_____																						
10. _____	0	<input type="checkbox"/>	_____																						
11. _____	0	<input type="checkbox"/>	_____																						
12. _____	0	<input type="checkbox"/>	_____																						
<b>Woody Vine Stratum</b> (Plot size: 30ft )																									
1. _____	0	<input type="checkbox"/>	_____																						
2. _____	0	<input type="checkbox"/>	_____																						
3. _____	0	<input type="checkbox"/>	_____																						
4. _____	0	<input type="checkbox"/>	_____																						
0 = Total Cover																									
<b>Definitions of Vegetation Strata</b>  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.																									
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>																									
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> Vegetation was disturbed 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.

# SOH



## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	4
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	2
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: The wetland received water from precipitation and runoff from the surrounding areas.			

**VEGETATION - Use scientific names of plant**Sampling Point: w-ah-20200107-08

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	0	<input type="checkbox"/>	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
0 = Total Cover				<b>Prevalence Index worksheet:</b>  Total % Cover of:      Multiply by: OBL species <u>70</u> x 1 = <u>70</u> FACW species <u>35</u> x 2 = <u>70</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>105</u> (A) <u>140</u> (B)  Prevalence Index = B/A = <u>1.333</u>
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> <b>Rapid Test for Hydrophytic Vegetation</b> <input checked="" type="checkbox"/> <b>Dominance Test is &gt; 50%</b> <input checked="" type="checkbox"/> <b>Prevalence Index is ≤ 3.0</b> <sup>1</sup> <input type="checkbox"/> <b>Morphological Adaptations</b> <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> <b>Problematic Hydrophytic Vegetation</b> <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				<b>Definitions of Vegetation Strata</b>  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.
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
0 = Total Cover				
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> Vegetation was disturbed 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.



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

[illegible]

<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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)

<sup>3</sup>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 classified this area as a wetland. The wetland is represented by PEM wetland components.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>			
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.			



**VEGETATION - Use scientific names of plant**Sampling Point: w-ah-20200107-01

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Populus deltoides</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
2. _____	<u>0</u>	<input type="checkbox"/>	_____	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>30</u> (A) <u>75</u> (B)  Prevalence Index = B/A = <u>2.500</u>
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
			<b>= Total Cover</b>	
<b>Sapling/Shrub Stratum (Plot size: <u>15ft</u> )</b>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1. _____	<u>0</u>	<input type="checkbox"/>	_____	
2. _____	<u>0</u>	<input type="checkbox"/>	_____	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	<b>Definitions of Vegetation Strata</b>  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.
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Herb Stratum (Plot size: <u>5ft</u> )</b>				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
1. <u>Cyperus esculentus</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
2. <u>Symphotrichum ericoides</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	<b>Remarks: (Include photo numbers here or on a separate sheet.)</b>  Vegetation was disturbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the wetland area. Photographs are located in Appendix D.
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
8. _____	<u>0</u>	<input type="checkbox"/>	_____	<b>Woody Vine Stratum (Plot size: <u>30ft</u> )</b>
9. _____	<u>0</u>	<input type="checkbox"/>	_____	
10. _____	<u>0</u>	<input type="checkbox"/>	_____	
11. _____	<u>0</u>	<input type="checkbox"/>	_____	
12. _____	<u>0</u>	<input type="checkbox"/>	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
			<b>= Total Cover</b>	
<b>Woody Vine Stratum (Plot size: <u>30ft</u> )</b>				
1. _____	<u>0</u>	<input type="checkbox"/>	_____	
2. _____	<u>0</u>	<input type="checkbox"/>	_____	<b>Remarks: (Include photo numbers here or on a separate sheet.)</b>  Vegetation was disturbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the wetland area. Photographs are located in Appendix D.
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
			<b>= Total Cover</b>	

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

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

Depth (inches)	Matrix		Redox Features						Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>				
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

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

## Hydric Soil Indicators:

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                         | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                            | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)              |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                        | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)                       | <input checked="" type="checkbox"/> Depleted Matrix (F3)                 |
| <input checked="" type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)                     | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Muck Mineral (S1)                      | <input type="checkbox"/> Redox Depressions (F8)                          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                     |  |
| <input type="checkbox"/> Sandy Redox (S5)                             |  |
| <input type="checkbox"/> Stripped Matrix (S6)                         |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)         |  |

Indicators for Problematic Hydric Soils : <sup>3</sup>

- |  |
|--|
| <input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)       |
| <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)     |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)  |
| <input type="checkbox"/> Dark Surface (S7) (LRR K, L, M)             |
| <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)     |
| <input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)           |
| <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)   |
| <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B) |
| <input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)   |
| <input type="checkbox"/> Red Parent Material (F21)                   |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12)            |
| <input type="checkbox"/> Other (Explain in Remarks)                  |

<sup>3</sup> 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 classified 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:** Lincoln Park-Riverbend 138kV Transmission Line  
**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.

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/> <b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 <b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: NA			
<b>Remarks:</b> 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	Dominance Test worksheet:
1. <u>Acer rubrum</u>	50	<input checked="" type="checkbox"/>	FAC	Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____	0	<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
7. _____	0	<input type="checkbox"/>		
<b>Sapling/Shrub Stratum (Plot size: 15' radius )</b>		50 = Total Cover		<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species <u>10</u> x 1 = <u>10</u> FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>75</u> x 3 = <u>225</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> <b>Column Totals:</b> <u>95</u> (A) <u>255</u> (B)  Prevalence Index = B/A = <u>2.684</u>
1. <u>Acer rubrum</u>	25	<input checked="" type="checkbox"/>	FAC	
2. <u>Lindera benzoin</u>	10	<input checked="" type="checkbox"/>	FACW	
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
<b>Herb Stratum (Plot size: 5' radius )</b>		35 = Total Cover		<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Glyceria striata</u>	10	<input checked="" type="checkbox"/>	OBL	
2. _____	0	<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
<b>Woody Vine Stratum (Plot size: None )</b>		10 = Total Cover		<b>Definitions of Vegetation Strata:</b>  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.   <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
1. _____	0	<input type="checkbox"/>		
2. _____	0	<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		

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.)

[illegible]

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

### Hydric Soil Indicators:

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                 | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)              |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)               | <input checked="" type="checkbox"/> Depleted Matrix (F3)                 |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Muck Mineral (S1)              | <input type="checkbox"/> Redox Depressions (F8)                          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)             |  |
| <input type="checkbox"/> Sandy Redox (S5)                     |  |
| <input type="checkbox"/> Stripped Matrix (S6)                 |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |  |

### Indicators for Problematic Hydric Soils :

- ☐ 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)

<sup>3</sup>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:** Lincoln Park-Riverbend 138kV Transmission Line  
**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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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 <i>Scirpus cyperinus</i> and <i>Leersia oryzoides</i> . The field identification point for the wetland is W-2020-10-06-BJM-001 PEM	

## Hydrology

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
<b>Remarks:</b> 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	<input type="checkbox"/>	_____	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
		0 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	0	<input type="checkbox"/>	_____	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
		0 = Total Cover		
Herb Stratum (Plot size: 5ft radius _____)				
1. <i>Typha latifolia</i>	5	<input type="checkbox"/>	OBL	
2. <i>Leersia oryzoides</i>	25	<input checked="" type="checkbox"/>	OBL	
3. <i>Scirpus atrovirens</i>	45	<input checked="" type="checkbox"/>	OBL	
4. <i>Phalaris arundinacea</i>	10	<input type="checkbox"/>	FACW	
5. <i>Persicaria maculosa</i>	15	<input type="checkbox"/>	FAC	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
8. _____	0	<input type="checkbox"/>	_____	
9. _____	0	<input type="checkbox"/>	_____	
10. _____	0	<input type="checkbox"/>	_____	
11. _____	0	<input type="checkbox"/>	_____	
12. _____	0	<input type="checkbox"/>	_____	
		100 = Total Cover		
Woody Vine Stratum (Plot size: _____)				
1. _____	0	<input type="checkbox"/>	_____	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
		0 = Total Cover		

**Dominance Test worksheet:**

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

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

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

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:	
OBL species <u>75</u>	x 1 =	<u>75</u>
FACW species <u>10</u>	x 2 =	<u>20</u>
FAC species <u>15</u>	x 3 =	<u>45</u>
FACU species <u>0</u>	x 4 =	<u>0</u>
UPL species <u>0</u>	x 5 =	<u>0</u>
Column Totals: <u>100</u> (A)		<u>140</u> (B)

Prevalence Index = B/A = 1.400

**Hydrophytic Vegetation Indicators:**

☒ Rapid Test for Hydrophytic Vegetation

☒ Dominance Test is > 50%

☒ Prevalence Index is ≤3.0 <sup>1</sup>

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

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> 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.)

[illegible]

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

### Hydric Soil Indicators:

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                 | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)              |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)               | <input checked="" type="checkbox"/> Depleted Matrix (F3)                 |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Muck Mineral (S1)              | <input type="checkbox"/> Redox Depressions (F8)                          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)             |  |
| <input type="checkbox"/> Sandy Redox (S5)                     |  |
| <input type="checkbox"/> Stripped Matrix (S6)                 |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |  |

### Indicators for Problematic Hydric Soils : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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:** Lincoln Park-Riverbend 138kV Transmission Line  
**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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
<b>Remarks:</b> 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	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
(Plot size: <u>330 ft radius</u> )				
1. <u>Acer rubrum</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)
2. _____	<u>0</u>	<input type="checkbox"/>	_____	Total Number of Dominant Species Across All Strata: <u>5</u> (B)
3. _____	<u>0</u>	<input type="checkbox"/>	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>80.0%</u> (A/B)
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
	<u>10</u>	<b>= Total Cover</b>		
<b>Sapling/Shrub Stratum</b>				<b>Prevalence Index worksheet:</b>
(Plot size: <u>15ft radius</u> )				Total % Cover of: Multiply by:
1. <u>Spiraea tomentosa</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	OBL species <u>45</u> x 1 = <u>45</u>
2. <u>Lonicera morrowii</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	FACW species <u>50</u> x 2 = <u>100</u>
3. <u>Lindera benzoin</u>	<u>5</u>	<input type="checkbox"/>	<u>FACW</u>	FAC species <u>10</u> x 3 = <u>30</u>
4. _____	<u>0</u>	<input type="checkbox"/>	_____	FACU species <u>20</u> x 4 = <u>80</u>
5. _____	<u>0</u>	<input type="checkbox"/>	_____	UPL species <u>0</u> x 5 = <u>0</u>
6. _____	<u>0</u>	<input type="checkbox"/>	_____	Column Totals: <u>125</u> (A) <u>255</u> (B)
7. _____	<u>0</u>	<input type="checkbox"/>	_____	Prevalence Index = B/A = <u>2.040</u>
	<u>40</u>	<b>= Total Cover</b>		
<b>Herb Stratum</b>				<b>Hydrophytic Vegetation Indicators:</b>
(Plot size: <u>5ft</u> )				<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation
1. <u>Scirpus cyperinus</u>	<u>45</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	<input checked="" type="checkbox"/> Dominance Test is > 50%
2. <u>Lysimachia nummularia</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup>
3. <u>Dichanthelium clandestinum</u>	<u>10</u>	<input type="checkbox"/>	<u>FACW</u>	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
4. <u>Ageratina altissima</u>	<u>5</u>	<input type="checkbox"/>	<u>FACU</u>	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
5. _____	<u>0</u>	<input type="checkbox"/>	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
6. _____	<u>0</u>	<input type="checkbox"/>	_____	<b>Definitions of Vegetation Strata:</b>
7. _____	<u>0</u>	<input type="checkbox"/>	_____	Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
8. _____	<u>0</u>	<input type="checkbox"/>	_____	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..
9. _____	<u>0</u>	<input type="checkbox"/>	_____	Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
10. _____	<u>0</u>	<input type="checkbox"/>	_____	Woody vine - All woody vines greater than 3.28 ft in height.
11. _____	<u>0</u>	<input type="checkbox"/>	_____	
12. _____	<u>0</u>	<input type="checkbox"/>	_____	
	<u>75</u>	<b>= Total Cover</b>		
<b>Woody Vine Stratum</b>				
(Plot size: _____ )				
1. _____	<u>0</u>	<input type="checkbox"/>	_____	
2. _____	<u>0</u>	<input type="checkbox"/>	_____	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
	<u>0</u>	<b>= Total Cover</b>		
				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.)

[illegible]

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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:** Lincoln Park-Riverbend 138kV Transmission Line  
**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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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 associated with the wetland is W-2020-10-06-BJM-002 PEM.	

## Hydrology

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A			
<b>Remarks:</b> The source of hydrology is from precipitation and overflow from the abutting stream.			



# VEGETATION - Use scientific names of plants

Sampling Point: Wetland RLP-30

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	0	<input type="checkbox"/>	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
0 = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: Multiply by: OBL species <u>70</u> x 1 = <u>70</u> FACW species <u>15</u> x 2 = <u>30</u> FAC species <u>15</u> x 3 = <u>45</u> FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>105</u> (A) <u>165</u> (B) Prevalence Index = B/A = <u>1.571</u>
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				<b>Definitions of Vegetation Strata:</b>  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.
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
0 = Total Cover				
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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

[illegible]



# WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line  
**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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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 atrovirens. The field identification of the sample point was W-2020-10-06-BJM-003 PEM.	

## Hydrology

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 <b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A			
<b>Remarks:</b> 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. <i>Platanus occidentalis</i>	5	<input checked="" type="checkbox"/>	FACW	
2. _____	0	<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
7. _____	0	<input type="checkbox"/>		
		5	= Total Cover	
<b>Sapling/Shrub Stratum (Plot size: 15ft radius )</b>				
1. <i>Rosa multiflora</i>	5	<input checked="" type="checkbox"/>	FACU	
2. _____	0	<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
7. _____	0	<input type="checkbox"/>		
		5	= Total Cover	
<b>Herb Stratum (Plot size: 5ft radius )</b>				
1. <i>Scirpus atrovirens</i>	45	<input checked="" type="checkbox"/>	OBL	
2. <i>Epilobium coloratum</i>	15	<input checked="" type="checkbox"/>	OBL	
3. <i>Dichanthelium clandestinum</i>	10	<input type="checkbox"/>	FACW	
4. <i>Leersia virginica</i>	10	<input type="checkbox"/>	FACW	
5. <i>Solidago gigantea</i>	5	<input type="checkbox"/>	FACW	
6. <i>Rumex crispus</i>	5	<input type="checkbox"/>	FAC	
7. _____	0	<input type="checkbox"/>		
8. _____	0	<input type="checkbox"/>		
9. _____	0	<input type="checkbox"/>		
10. _____	0	<input type="checkbox"/>		
11. _____	0	<input type="checkbox"/>		
12. _____	0	<input type="checkbox"/>		
		90	= Total Cover	
<b>Woody Vine Stratum (Plot size: _____ )</b>				
1. _____	0	<input type="checkbox"/>		
2. _____	0	<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
		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 <u>60</u>	x 1 = <u>60</u>
FACW species <u>30</u>	x 2 = <u>60</u>
FAC species <u>5</u>	x 3 = <u>15</u>
FACU species <u>5</u>	x 4 = <u>20</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>100</u> (A)	<u>155</u> (B)
Prevalence Index = B/A = <u>1.550</u>	

**Hydrophytic Vegetation Indicators:**

☐ Rapid Test for Hydrophytic Vegetation

☒ Dominance Test is > 50%

☒ Prevalence Index is ≤3.0 <sup>1</sup>

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

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> 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.)

[illegible]

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

### Hydric Soil Indicators:

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                 | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)              |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)               | <input checked="" type="checkbox"/> Depleted Matrix (F3)                 |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Muck Mineral (S1)              | <input type="checkbox"/> Redox Depressions (F8)                          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)             |  |
| <input type="checkbox"/> Sandy Redox (S5)                     |  |
| <input type="checkbox"/> Stripped Matrix (S6)                 |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |  |

### Indicators for Problematic Hydric Soils : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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:** Lincoln Park-Riverbend 138kV Transmission Line  
**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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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, Linder benzoin, and Scirpus atrovirens. The field identification of the sample point was W-2020-10-06-BJM-004 PFO.	

## Hydrology

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): 0		
Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): 0		
Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): 0	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A			
<b>Remarks:</b> 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: <u>30 ft radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Acer rubrum</u>	25	<input checked="" type="checkbox"/>	FAC	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>5</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)
2. <u>Platanus occidentalis</u>	10	<input checked="" type="checkbox"/>	FACW	
3. <u>Carya ovata</u>	5	<input type="checkbox"/>	FACU	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
<b>Sapling/Shrub Stratum (Plot size: <u>15ft radius</u> )</b>			40 = Total Cover	<b>Prevalence Index worksheet:</b> Total % Cover of: Multiply by: OBL species <u>55</u> x 1 = <u>55</u> FACW species <u>25</u> x 2 = <u>50</u> FAC species <u>35</u> x 3 = <u>105</u> FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>120</u> (A) <u>230</u> (B) Prevalence Index = B/A = <u>1.917</u>
1. <u>Lindera benzoin</u>	15	<input checked="" type="checkbox"/>	FACW	
2. <u>Cornus racemosa</u>	10	<input checked="" type="checkbox"/>	FAC	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
<b>Herb Stratum (Plot size: <u>5ft radius</u> )</b>			25 = Total Cover	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Scirpus atrovirens</u>	55	<input checked="" type="checkbox"/>	OBL	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
8. _____	0	<input type="checkbox"/>	_____	
9. _____	0	<input type="checkbox"/>	_____	
10. _____	0	<input type="checkbox"/>	_____	
11. _____	0	<input type="checkbox"/>	_____	
12. _____	0	<input type="checkbox"/>	_____	
<b>Woody Vine Stratum (Plot size: _____ )</b>			55 = Total Cover	<b>Definitions of Vegetation Strata:</b>  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.
1. _____	0	<input type="checkbox"/>	_____	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
			0 = Total Cover	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>

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.)

[illegible]

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

### Hydric Soil Indicators:

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                 | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)              |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)               | <input checked="" type="checkbox"/> Depleted Matrix (F3)                 |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Muck Mineral (S1)              | <input type="checkbox"/> Redox Depressions (F8)                          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)             |  |
| <input type="checkbox"/> Sandy Redox (S5)                     |  |
| <input type="checkbox"/> Stripped Matrix (S6)                 |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |  |

### Indicators for Problematic Hydric Soils :

- ☐ 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)

<sup>3</sup>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:** Lincoln-Park Riverbend 138kV Transmission Line  
**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.

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
<b>Remarks:</b> 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	Dominance Test worksheet:
1. _____	0	<input type="checkbox"/>	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
<u>0</u> = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>85</u> x 4 = <u>340</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>85</u> (A) <u>340</u> (B) Prevalence Index = B/A = <u>4.000</u>
<b>Sapling/Shrub Stratum (Plot size: _____)</b>				
1. _____	0	<input type="checkbox"/>	_____	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
<u>0</u> = Total Cover				
<b>Herb Stratum (Plot size: 5ft radius _____)</b>				
1. <i>Reynoutria japonica</i>	85	<input checked="" type="checkbox"/>	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
8. _____	0	<input type="checkbox"/>	_____	
9. _____	0	<input type="checkbox"/>	_____	
10. _____	0	<input type="checkbox"/>	_____	
11. _____	0	<input type="checkbox"/>	_____	
12. _____	0	<input type="checkbox"/>	_____	
<u>85</u> = Total Cover				
<b>Woody Vine Stratum (Plot size: _____)</b>				
1. _____	0	<input type="checkbox"/>	_____	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.
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
<u>0</u> = Total Cover				
<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>				
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.)

[illegible]

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 :

- ☐ 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)

<sup>3</sup>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:** Lincoln-Park Riverbend 138kV Transmission Line **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.

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0			
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
<b>Remarks:</b> 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	Dominance Test worksheet:
1. _____	0	<input type="checkbox"/>	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
0 = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>100</u> x 4 = <u>400</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>400</u> (B) Prevalence Index = B/A = <u>4.000</u>
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  <b>Definitions of Vegetation Strata:</b>  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.    <b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b>          				

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

## Soil

**Sampling Point:** UPL-2021-03-11-BJM-002

[illegible]



# WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln-Park Riverbend 138kV Transmission Line  
**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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of 2 required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0		Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
<b>Remarks:</b> 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	Dominance Test worksheet:
1. _____	0	<input type="checkbox"/>	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>20.0%</u> (A/B)
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
<b>0 = Total Cover</b>				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>15</u> x 3 = <u>45</u> FACU species <u>85</u> x 4 = <u>340</u> UPL species <u>10</u> x 5 = <u>50</u> <b>Column Totals:</b> <u>120</u> (A) <u>455</u> (B) Prevalence Index = B/A = <u>3.792</u>
<b>Sapling/Shrub Stratum (Plot size: 15 ft radius )</b>				
1. <i>Rubus occidentalis</i>	10	<input checked="" type="checkbox"/>	UPL	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
<b>10 = Total Cover</b>				
<b>Herb Stratum (Plot size: 5ft radius )</b>				
1. <i>Andropogon virginicus</i>	55	<input checked="" type="checkbox"/>	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <i>Solidago altissima</i>	15	<input checked="" type="checkbox"/>	FACU	
3. <i>Reynoutria japonica</i>	15	<input checked="" type="checkbox"/>	FACU	
4. <i>Symphotrichum lateriflorum</i>	15	<input checked="" type="checkbox"/>	FAC	
5. <i>Agrostis gigantea</i>	10	<input type="checkbox"/>	FACW	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
8. _____	0	<input type="checkbox"/>	_____	
9. _____	0	<input type="checkbox"/>	_____	
10. _____	0	<input type="checkbox"/>	_____	
11. _____	0	<input type="checkbox"/>	_____	
12. _____	0	<input type="checkbox"/>	_____	
<b>110 = Total Cover</b>				
<b>Woody Vine Stratum (Plot size: _____)</b>				
1. _____	0	<input type="checkbox"/>	_____	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.
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
<b>0 = Total Cover</b>				<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>

**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.)

[illegible]

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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:** Lincoln Park-Riverbend 138kV Transmission Line  
**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.

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0		<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
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. <i>Acer saccharinum</i>	30	<input checked="" type="checkbox"/>	FACW	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>9</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)
2. <i>Populus grandidentata</i>	10	<input checked="" type="checkbox"/>	FACU	
3. <i>Acer saccharum</i>	10	<input checked="" type="checkbox"/>	FACU	
4. <i>Platanus occidentalis</i>	10	<input checked="" type="checkbox"/>	FACW	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
<b>Sapling/Shrub Stratum (Plot size: 15' radius )</b>		60 = Total Cover		<b>Prevalence Index worksheet:</b> Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>50</u> x 2 = <u>100</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>120</u> x 4 = <u>480</u> UPL species <u>30</u> x 5 = <u>150</u> Column Totals: <u>200</u> (A) <u>730</u> (B) Prevalence Index = B/A = <u>3.650</u>
1. <i>Acer saccharinum</i>	10	<input checked="" type="checkbox"/>	FACW	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
<b>Herb Stratum (Plot size: 5' radius )</b>		10 = Total Cover		<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <i>Parthenocissus quinquefolia</i>	50	<input checked="" type="checkbox"/>	FACU	
2. <i>Ambrosia artemisiifolia</i>	20	<input checked="" type="checkbox"/>	FACU	
3. <i>Dactylis glomerata</i>	20	<input checked="" type="checkbox"/>	FACU	
4. <i>Verbascum thapsus</i>	20	<input checked="" type="checkbox"/>	UPL	
5. <i>Solidago canadensis</i>	10	<input type="checkbox"/>	FACU	
6. <i>Daucus carota</i>	10	<input type="checkbox"/>	UPL	
7. _____	0	<input type="checkbox"/>	_____	
8. _____	0	<input type="checkbox"/>	_____	
9. _____	0	<input type="checkbox"/>	_____	
10. _____	0	<input type="checkbox"/>	_____	
11. _____	0	<input type="checkbox"/>	_____	
12. _____	0	<input type="checkbox"/>	_____	
<b>Woody Vine Stratum (Plot size: None )</b>		130 = Total Cover		<b>Definitions of Vegetation Strata:</b>  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.
1. _____	0	<input type="checkbox"/>	_____	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
		0 = Total Cover		<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b>     				

\*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.)

[illegible]

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: No wetland hydrology was identified within the data point.			

**Sampling Point:** upl-aeh-20200106-01

Northcentral and Northeast Region - Version 2.0



## Soil

**Sampling Point:** upl-aeH-20200106-01

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

[illegible]

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> Upland was taken in a floodplain along the Mahoning River.	

**Hydrology**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
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	Dominance Test worksheet:	
1. <i>Platanus occidentalis</i>	40	<input checked="" type="checkbox"/>	FACW	Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)	
2. <i>Acer rubrum</i>	20	<input checked="" type="checkbox"/>	FAC	Total Number of Dominant Species Across All Strata: <u>6</u> (B)	
3. _____	0	<input type="checkbox"/>	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)	
4. _____	0	<input type="checkbox"/>	_____		
5. _____	0	<input type="checkbox"/>	_____		
6. _____	0	<input type="checkbox"/>	_____		
7. _____	0	<input type="checkbox"/>	_____		
<b>Sapling/Shrub Stratum (Plot size: 15ft )</b>				<b>Prevalence Index worksheet:</b>	
60 = Total Cover				Total % Cover of: Multiply by:	
1. <i>Lonicera morrowii</i>	20	<input checked="" type="checkbox"/>	FACU	OBL species <u>0</u>	x 1 = <u>0</u>
2. <i>Acer rubrum</i>	15	<input checked="" type="checkbox"/>	FAC	FACW species <u>40</u>	x 2 = <u>80</u>
3. _____	0	<input type="checkbox"/>	_____	FAC species <u>35</u>	x 3 = <u>105</u>
4. _____	0	<input type="checkbox"/>	_____	FACU species <u>27</u>	x 4 = <u>108</u>
5. _____	0	<input type="checkbox"/>	_____	UPL species <u>5</u>	x 5 = <u>25</u>
6. _____	0	<input type="checkbox"/>	_____	Column Totals: <u>107</u> (A)	<u>318</u> (B)
7. _____	0	<input type="checkbox"/>	_____	Prevalence Index = B/A = <u>2.972</u>	
<b>Herb Stratum (Plot size: 5ft )</b>				<b>Hydrophytic Vegetation Indicators:</b>	
35 = Total Cover				<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation	
1. <i>Solidago canadensis</i>	7	<input checked="" type="checkbox"/>	FACU	<input type="checkbox"/> Dominance Test is > 50%	
2. <i>Daucus carota</i>	5	<input checked="" type="checkbox"/>	UPL	<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>	
3. _____	0	<input type="checkbox"/>	_____	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
4. _____	0	<input type="checkbox"/>	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
5. _____	0	<input type="checkbox"/>	_____		
6. _____	0	<input type="checkbox"/>	_____		
7. _____	0	<input type="checkbox"/>	_____		
8. _____	0	<input type="checkbox"/>	_____		
9. _____	0	<input type="checkbox"/>	_____		
10. _____	0	<input type="checkbox"/>	_____		
11. _____	0	<input type="checkbox"/>	_____		
12. _____	0	<input type="checkbox"/>	_____		
<b>Woody Vine Stratum (Plot size: 30ft )</b>				<b>Definitions of Vegetation Strata</b>	
12 = Total Cover				Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
1. _____	0	<input type="checkbox"/>	_____	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..	
2. _____	0	<input type="checkbox"/>	_____	Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
3. _____	0	<input type="checkbox"/>	_____	Woody vine - All woody vines greater than 3.28 ft in height.	
4. _____	0	<input type="checkbox"/>	_____		
0 = Total Cover					
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> Vegetation was disturbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the upland area.					
				<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	

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

## Soil

**Sampling Point:** upl-aeH-20190106-02

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

[illegible]

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

### Hydric Soil Indicators:

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                 | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)              |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)               | <input type="checkbox"/> Depleted Matrix (F3)                            |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Muck Mineral (S1)              | <input type="checkbox"/> Redox Depressions (F8)                          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)             |  |
| <input type="checkbox"/> Sandy Redox (S5)                     |  |
| <input type="checkbox"/> Stripped Matrix (S6)                 |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |  |

### Indicators for Problematic Hydric Soils : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> Upland was taken in the forested area north of the Mahoning River and east of the substation.	

**Hydrology**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
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	Dominance Test worksheet:
1. <i>Acer saccharum</i>	30	<input checked="" type="checkbox"/>	FACU	Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>25.0%</u> (A/B)
2. <i>Carya laciniosa</i>	10	<input checked="" type="checkbox"/>	FACW	
3. <i>Platanus occidentalis</i>	5	<input type="checkbox"/>	FACW	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	<b>Prevalence Index worksheet:</b> 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
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
45 = Total Cover				
<b>Sapling/Shrub Stratum (Plot size: 15ft )</b>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <i>Acer saccharum</i>	15	<input checked="" type="checkbox"/>	FACU	
2. <i>Prunus serotina</i>	5	<input checked="" type="checkbox"/>	FACU	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	<b>Definitions of Vegetation Strata</b>  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.
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
<b>Herb Stratum (Plot size: 5ft )</b>				<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
1. _____	0	<input type="checkbox"/>	_____	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	<b>Remarks: (Include photo numbers here or on a separate sheet.)</b>  Vegetation was disturbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the upland area.
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
<b>Woody Vine Stratum (Plot size: 30ft )</b>				
1. _____	0	<input type="checkbox"/>	_____	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
0 = Total Cover				

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





**WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region**

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> Upland was taken west of the railroad within a swale between the railroad and other construction/industrial activities.	

**Hydrology**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
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	Dominance Test worksheet:
1. <i>Acer saccharum</i>	70	<input checked="" type="checkbox"/>	FACU	Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
2. <i>Ulmus rubra</i>	10	<input type="checkbox"/>	FAC	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
<b>Sapling/Shrub Stratum (Plot size: 15ft )</b> 80 = Total Cover				<b>Prevalence Index worksheet:</b> 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
1. <i>Acer saccharum</i>	20	<input checked="" type="checkbox"/>	FACU	
2. <i>Lonicera morrowii</i>	10	<input checked="" type="checkbox"/>	FACU	
3. <i>Ulmus rubra</i>	5	<input type="checkbox"/>	FAC	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
<b>Herb Stratum (Plot size: 5ft )</b> 35 = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	0	<input type="checkbox"/>	_____	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
8. _____	0	<input type="checkbox"/>	_____	
9. _____	0	<input type="checkbox"/>	_____	
10. _____	0	<input type="checkbox"/>	_____	
11. _____	0	<input type="checkbox"/>	_____	
12. _____	0	<input type="checkbox"/>	_____	
<b>Woody Vine Stratum (Plot size: 30ft )</b> 0 = Total Cover				<b>Definitions of Vegetation Strata</b>  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.
1. _____	0	<input type="checkbox"/>	_____	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
0 = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.

## Soil

**Sampling Point:** upl-aeh-20200106-04

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

[illegible]

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
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	Dominance Test worksheet:	
1. _____	0	<input type="checkbox"/>	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)	
2. _____	0	<input type="checkbox"/>	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)	
3. _____	0	<input type="checkbox"/>	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)	
4. _____	0	<input type="checkbox"/>	_____		
5. _____	0	<input type="checkbox"/>	_____		
6. _____	0	<input type="checkbox"/>	_____		
7. _____	0	<input type="checkbox"/>	_____		
				<b>Prevalence Index worksheet:</b>	
				Total % Cover of: Multiply by:	
				OBL species <u>0</u> x 1 = <u>0</u>	
				FACW species <u>0</u> x 2 = <u>0</u>	
				FAC species <u>0</u> x 3 = <u>0</u>	
				FACU species <u>75</u> x 4 = <u>300</u>	
				UPL species <u>5</u> x 5 = <u>25</u>	
				Column Totals: <u>80</u> (A) <u>325</u> (B)	
				Prevalence Index = B/A = <u>4.063</u>	
				<b>Hydrophytic Vegetation Indicators:</b>	
				<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation	
				<input type="checkbox"/> Dominance Test is > 50%	
				<input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup>	
				<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
				<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				<b>Definitions of Vegetation Strata</b>	
				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.	
				<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b>					
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.



## Soil

**Sampling Point:** upl-aeh-20200106-05

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

[illegible]

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> Upland was taken within the floodplain of the Mahoning River.	

**Hydrology**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
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	Dominance Test worksheet:	
1. <i>Carya ovata</i>	30	<input checked="" type="checkbox"/>	FACU	Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)	
2. <i>Acer rubrum</i>	20	<input checked="" type="checkbox"/>	FAC	Total Number of Dominant Species Across All Strata: <u>4</u> (B)	
3. <i>Ulmus rubra</i>	15	<input checked="" type="checkbox"/>	FAC	Percent of dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)	
4. _____	0	<input type="checkbox"/>	_____		
5. _____	0	<input type="checkbox"/>	_____		
6. _____	0	<input type="checkbox"/>	_____		
7. _____	0	<input type="checkbox"/>	_____		
				<b>Prevalence Index worksheet:</b>	
Sapling/Shrub Stratum (Plot size: 15ft )				Total % Cover of: Multiply by:	
1. _____	0	<input type="checkbox"/>	_____	OBL species <u>0</u>	x 1 = <u>0</u>
2. _____	0	<input type="checkbox"/>	_____	FACW species <u>0</u>	x 2 = <u>0</u>
3. _____	0	<input type="checkbox"/>	_____	FAC species <u>35</u>	x 3 = <u>105</u>
4. _____	0	<input type="checkbox"/>	_____	FACU species <u>35</u>	x 4 = <u>140</u>
5. _____	0	<input type="checkbox"/>	_____	UPL species <u>0</u>	x 5 = <u>0</u>
6. _____	0	<input type="checkbox"/>	_____	Column Totals: <u>70</u>	(A) <u>245</u> (B)
7. _____	0	<input type="checkbox"/>	_____	Prevalence Index = B/A = <u>3.500</u>	
Herb Stratum (Plot size: 5ft )				<b>Hydrophytic Vegetation Indicators:</b>	
1. <i>Solidago canadensis</i>	5	<input checked="" type="checkbox"/>	FACU	<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation	
2. _____	0	<input type="checkbox"/>	_____	<input type="checkbox"/> Dominance Test is > 50%	
3. _____	0	<input type="checkbox"/>	_____	<input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>	
4. _____	0	<input type="checkbox"/>	_____	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
5. _____	0	<input type="checkbox"/>	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
6. _____	0	<input type="checkbox"/>	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
7. _____	0	<input type="checkbox"/>	_____	<b>Definitions of Vegetation Strata</b>	
8. _____	0	<input type="checkbox"/>	_____	Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
9. _____	0	<input type="checkbox"/>	_____	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..	
10. _____	0	<input type="checkbox"/>	_____	Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
11. _____	0	<input type="checkbox"/>	_____	Woody vine - All woody vines greater than 3.28 ft in height.	
12. _____	0	<input type="checkbox"/>	_____		
Woody Vine Stratum (Plot size: 30ft )				<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
1. _____	0	<input type="checkbox"/>	_____		
2. _____	0	<input type="checkbox"/>	_____		
3. _____	0	<input type="checkbox"/>	_____		
4. _____	0	<input type="checkbox"/>	_____		
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.

## Soil

**Sampling Point:** upl-aeh-20200107-01

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

[illegible]

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/> <b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> Upland taken in a low spot within a disturbed area.	

**Hydrology**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
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	Dominance Test worksheet:	
1. <i>Populus deltoides</i>	15	<input checked="" type="checkbox"/>	FAC	Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)	
2. <i>Ulmus rubra</i>	10	<input checked="" type="checkbox"/>	FAC	Total Number of Dominant Species Across All Strata: <u>5</u> (B)	
3. _____	0	<input type="checkbox"/>	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>60.0%</u> (A/B)	
4. _____	0	<input type="checkbox"/>	_____		
5. _____	0	<input type="checkbox"/>	_____		
6. _____	0	<input type="checkbox"/>	_____		
7. _____	0	<input type="checkbox"/>	_____		
				<b>Prevalence Index worksheet:</b>	
Sapling/Shrub Stratum (Plot size: 15ft )				Total % Cover of: Multiply by:	
1. <i>Populus deltoides</i>	5	<input checked="" type="checkbox"/>	FAC	OBL species <u>0</u>	x 1 = <u>0</u>
2. _____	0	<input type="checkbox"/>	_____	FACW species <u>0</u>	x 2 = <u>0</u>
3. _____	0	<input type="checkbox"/>	_____	FAC species <u>30</u>	x 3 = <u>90</u>
4. _____	0	<input type="checkbox"/>	_____	FACU species <u>40</u>	x 4 = <u>160</u>
5. _____	0	<input type="checkbox"/>	_____	UPL species <u>0</u>	x 5 = <u>0</u>
6. _____	0	<input type="checkbox"/>	_____	Column Totals: <u>70</u> (A)	<u>250</u> (B)
7. _____	0	<input type="checkbox"/>	_____	Prevalence Index = B/A = <u>3.571</u>	
Herb Stratum (Plot size: 5ft )				<b>Hydrophytic Vegetation Indicators:</b>	
1. <i>Solidago canadensis</i>	30	<input checked="" type="checkbox"/>	FACU	<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation	
2. <i>Oxalis corniculata</i>	10	<input checked="" type="checkbox"/>	FACU	<input checked="" type="checkbox"/> Dominance Test is > 50%	
3. _____	0	<input type="checkbox"/>	_____	<input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>	
4. _____	0	<input type="checkbox"/>	_____	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
5. _____	0	<input type="checkbox"/>	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
6. _____	0	<input type="checkbox"/>	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
7. _____	0	<input type="checkbox"/>	_____	<b>Definitions of Vegetation Strata</b>	
8. _____	0	<input type="checkbox"/>	_____	Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
9. _____	0	<input type="checkbox"/>	_____	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..	
10. _____	0	<input type="checkbox"/>	_____	Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
11. _____	0	<input type="checkbox"/>	_____	Woody vine - All woody vines greater than 3.28 ft in height.	
12. _____	0	<input type="checkbox"/>	_____		
Woody Vine Stratum (Plot size: 30ft )					
1. _____	0	<input type="checkbox"/>	_____		
2. _____	0	<input type="checkbox"/>	_____		
3. _____	0	<input type="checkbox"/>	_____		
4. _____	0	<input type="checkbox"/>	_____		
				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.



## Soil

**Sampling Point:** upl-aeh-20200107-02

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

[illegible]

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

### Hydric Soil Indicators:

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                 | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)              |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)               | <input checked="" type="checkbox"/> Depleted Matrix (F3)                 |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Muck Mineral (S1)              | <input type="checkbox"/> Redox Depressions (F8)                          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)             |  |
| <input type="checkbox"/> Sandy Redox (S5)                     |  |
| <input type="checkbox"/> Stripped Matrix (S6)                 |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |  |

### Indicators for Problematic Hydric Soils : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> Upland was taken within a disturbed industrial site.	

**Hydrology**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
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	Dominance Test worksheet:	
1. _____	0	<input type="checkbox"/>	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)	
2. _____	0	<input type="checkbox"/>	_____	Total Number of Dominant Species Across All Strata: <u>4</u> (B)	
3. _____	0	<input type="checkbox"/>	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>25.0%</u> (A/B)	
4. _____	0	<input type="checkbox"/>	_____		
5. _____	0	<input type="checkbox"/>	_____		
6. _____	0	<input type="checkbox"/>	_____		
7. _____	0	<input type="checkbox"/>	_____		
				<b>Prevalence Index worksheet:</b>	
Sapling/Shrub Stratum (Plot size: 15ft )				Total % Cover of: Multiply by:	
1. <i>Ulmus rubra</i>	5	<input checked="" type="checkbox"/>	FAC	OBL species <u>0</u>	x 1 = <u>0</u>
2. _____	0	<input type="checkbox"/>	_____	FACW species <u>0</u>	x 2 = <u>0</u>
3. _____	0	<input type="checkbox"/>	_____	FAC species <u>5</u>	x 3 = <u>15</u>
4. _____	0	<input type="checkbox"/>	_____	FACU species <u>107</u>	x 4 = <u>428</u>
5. _____	0	<input type="checkbox"/>	_____	UPL species <u>0</u>	x 5 = <u>0</u>
6. _____	0	<input type="checkbox"/>	_____	Column Totals: <u>112</u> (A)	<u>443</u> (B)
7. _____	0	<input type="checkbox"/>	_____	Prevalence Index = B/A = <u>3.955</u>	
Herb Stratum (Plot size: 5ft )				<b>Hydrophytic Vegetation Indicators:</b>	
1. <i>Schedonorus arundinaceus</i>	35	<input checked="" type="checkbox"/>	FACU	<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation	
2. <i>Solidago canadensis</i>	35	<input checked="" type="checkbox"/>	FACU	<input type="checkbox"/> Dominance Test is > 50%	
3. <i>Dipsacus fullonum</i>	30	<input checked="" type="checkbox"/>	FACU	<input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup>	
4. <i>Symphyotrichum ericoides</i>	5	<input type="checkbox"/>	FACU	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
5. <i>Plantago lanceolata</i>	2	<input type="checkbox"/>	FACU	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
6. _____	0	<input type="checkbox"/>	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
7. _____	0	<input type="checkbox"/>	_____	<b>Definitions of Vegetation Strata</b>	
8. _____	0	<input type="checkbox"/>	_____	Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
9. _____	0	<input type="checkbox"/>	_____	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall.	
10. _____	0	<input type="checkbox"/>	_____	Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
11. _____	0	<input type="checkbox"/>	_____	Woody vine - All woody vines greater than 3.28 ft in height.	
12. _____	0	<input type="checkbox"/>	_____		
Woody Vine Stratum (Plot size: 30ft )				<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
1. _____	0	<input type="checkbox"/>	_____		
2. _____	0	<input type="checkbox"/>	_____		
3. _____	0	<input type="checkbox"/>	_____		
4. _____	0	<input type="checkbox"/>	_____		
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.

## Soil

**Sampling Point:** upl-aeh-20200107-04

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

[illegible]

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/> <b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> Upland was taken within an upland drainage feature (swale) of apparent recently constructed urban park landscape	

**Hydrology**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>			
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	Dominance Test worksheet:	
1. _____	0	<input type="checkbox"/>	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)	
2. _____	0	<input type="checkbox"/>	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)	
3. _____	0	<input type="checkbox"/>	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)	
4. _____	0	<input type="checkbox"/>	_____		
5. _____	0	<input type="checkbox"/>	_____		
6. _____	0	<input type="checkbox"/>	_____		
7. _____	0	<input type="checkbox"/>	_____		
				<b>Prevalence Index worksheet:</b>	
				Total % Cover of: Multiply by:	
				OBL species <u>5</u> x 1 = <u>5</u>	
				FACW species <u>60</u> x 2 = <u>120</u>	
				FAC species <u>0</u> x 3 = <u>0</u>	
				FACU species <u>20</u> x 4 = <u>80</u>	
				UPL species <u>0</u> x 5 = <u>0</u>	
				Column Totals: <u>85</u> (A) <u>205</u> (B)	
				Prevalence Index = B/A = <u>2.412</u>	
				<b>Hydrophytic Vegetation Indicators:</b>	
				<input checked="" type="checkbox"/> <b>Rapid Test for Hydrophytic Vegetation</b>	
				<input checked="" type="checkbox"/> <b>Dominance Test is &gt; 50%</b>	
				<input checked="" type="checkbox"/> <b>Prevalence Index is ≤3.0</b> <sup>1</sup>	
				<input type="checkbox"/> <b>Morphological Adaptations</b> <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
				<input type="checkbox"/> <b>Problematic Hydrophytic Vegetation</b> <sup>1</sup> (Explain)	
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				<b>Definitions of Vegetation Strata</b>	
				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.	
				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b>					
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.



## Soil

**Sampling Point:** upl-20200108-01

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

[illegible]

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> Upland area between the railroad corridor and commercial lots.	

**Hydrology**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
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	Dominance Test worksheet:	
1. <i>Acer negundo</i>	5	<input checked="" type="checkbox"/>	FAC	Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)	
2. _____	0	<input type="checkbox"/>	_____	Total Number of Dominant Species Across All Strata: <u>5</u> (B)	
3. _____	0	<input type="checkbox"/>	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>40.0%</u> (A/B)	
4. _____	0	<input type="checkbox"/>	_____		
5. _____	0	<input type="checkbox"/>	_____		
6. _____	0	<input type="checkbox"/>	_____		
7. _____	0	<input type="checkbox"/>	_____		
				<b>Prevalence Index worksheet:</b>	
Sapling/Shrub Stratum (Plot size: 15ft )				Total % Cover of: Multiply by:	
1. <i>Fagus grandifolia</i>	10	<input checked="" type="checkbox"/>	FACU	OBL species <u>0</u>	x 1 = <u>0</u>
2. <i>Acer negundo</i>	5	<input checked="" type="checkbox"/>	FAC	FACW species <u>0</u>	x 2 = <u>0</u>
3. _____	0	<input type="checkbox"/>	_____	FAC species <u>10</u>	x 3 = <u>30</u>
4. _____	0	<input type="checkbox"/>	_____	FACU species <u>70</u>	x 4 = <u>280</u>
5. _____	0	<input type="checkbox"/>	_____	UPL species <u>0</u>	x 5 = <u>0</u>
6. _____	0	<input type="checkbox"/>	_____	Column Totals: <u>80</u> (A)	<u>310</u> (B)
7. _____	0	<input type="checkbox"/>	_____	Prevalence Index = B/A = <u>3.875</u>	
Herb Stratum (Plot size: 5ft )				<b>Hydrophytic Vegetation Indicators:</b>	
1. <i>Solidago canadensis</i>	40	<input checked="" type="checkbox"/>	FACU	<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation	
2. <i>Reynoutria japonica</i>	20	<input checked="" type="checkbox"/>	FACU	<input type="checkbox"/> Dominance Test is > 50%	
3. _____	0	<input type="checkbox"/>	_____	<input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup>	
4. _____	0	<input type="checkbox"/>	_____	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
5. _____	0	<input type="checkbox"/>	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
6. _____	0	<input type="checkbox"/>	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
7. _____	0	<input type="checkbox"/>	_____	<b>Definitions of Vegetation Strata</b>	
8. _____	0	<input type="checkbox"/>	_____	Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
9. _____	0	<input type="checkbox"/>	_____	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..	
10. _____	0	<input type="checkbox"/>	_____	Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
11. _____	0	<input type="checkbox"/>	_____	Woody vine - All woody vines greater than 3.28 ft in height.	
12. _____	0	<input type="checkbox"/>	_____		
Woody Vine Stratum (Plot size: 30ft )					
1. _____	0	<input type="checkbox"/>	_____		
2. _____	0	<input type="checkbox"/>	_____		
3. _____	0	<input type="checkbox"/>	_____		
4. _____	0	<input type="checkbox"/>	_____		
				<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.

## Soil

**Sampling Point:** upl-aeh-20200108-03

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

[illegible]

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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:** Lincoln Park-Riverbend 138kV Transmission Line **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.**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/> <b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
--	--

**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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>
<b>Primary Indicators (minimum of one required; check all that apply)</b>		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> 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	Dominance Test worksheet:														
1. <i>Salix babylonica</i>	10	<input checked="" type="checkbox"/>	FAC	Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)														
2. <i>Betula alleghaniensis</i>	3	<input checked="" type="checkbox"/>	FAC															
3. _____	0	<input type="checkbox"/>	_____															
4. _____	0	<input type="checkbox"/>	_____															
5. _____	0	<input type="checkbox"/>	_____															
6. _____	0	<input type="checkbox"/>	_____															
7. _____	0	<input type="checkbox"/>	_____															
<b>13 = Total Cover</b>				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>35</u></td> <td>x 3 = <u>105</u></td> </tr> <tr> <td>FACU species <u>58</u></td> <td>x 4 = <u>232</u></td> </tr> <tr> <td>UPL species <u>10</u></td> <td>x 5 = <u>50</u></td> </tr> <tr> <td><b>Column Totals:</b> <u>113</u> (A)</td> <td><u>407</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.602</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>35</u>	x 3 = <u>105</u>	FACU species <u>58</u>	x 4 = <u>232</u>	UPL species <u>10</u>	x 5 = <u>50</u>	<b>Column Totals:</b> <u>113</u> (A)	<u>407</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>10</u>	x 2 = <u>20</u>																	
FAC species <u>35</u>	x 3 = <u>105</u>																	
FACU species <u>58</u>	x 4 = <u>232</u>																	
UPL species <u>10</u>	x 5 = <u>50</u>																	
<b>Column Totals:</b> <u>113</u> (A)	<u>407</u> (B)																	
<b>13 = Total Cover</b>																		
<b>Sapling/Shrub Stratum (Plot size: 15' r )</b>																		
1. <i>Rhamnus cathartica</i>	10	<input checked="" type="checkbox"/>	FAC															
2. <i>Betula nigra</i>	10	<input checked="" type="checkbox"/>	FACW															
3. <i>Lonicera morrowii</i>	20	<input checked="" type="checkbox"/>	FACU															
4. <i>Rubus allegheniensis</i>	3	<input type="checkbox"/>	FACU															
5. <i>Acer saccharum</i>	5	<input type="checkbox"/>	FACU															
6. _____	0	<input type="checkbox"/>	_____															
7. _____	0	<input type="checkbox"/>	_____															
<b>48 = Total Cover</b>																		
<b>Herb Stratum (Plot size: 5' r )</b>																		
1. <i>Brassica nigra</i>	10	<input type="checkbox"/>	UPL	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <i>Solidago altissima</i>	30	<input checked="" type="checkbox"/>	FACU															
3. <i>Agrimonia parviflora</i>	10	<input type="checkbox"/>	FAC															
4. <i>Geum canadense</i>	2	<input type="checkbox"/>	FAC															
5. _____	0	<input type="checkbox"/>	_____															
6. _____	0	<input type="checkbox"/>	_____															
7. _____	0	<input type="checkbox"/>	_____															
8. _____	0	<input type="checkbox"/>	_____															
9. _____	0	<input type="checkbox"/>	_____															
10. _____	0	<input type="checkbox"/>	_____															
11. _____	0	<input type="checkbox"/>	_____															
12. _____	0	<input type="checkbox"/>	_____															
<b>52 = Total Cover</b>																		
<b>Woody Vine Stratum (Plot size: 30' r )</b>																		
1. _____	0	<input type="checkbox"/>	_____	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.														
2. _____	0	<input type="checkbox"/>	_____															
3. _____	0	<input type="checkbox"/>	_____															
4. _____	0	<input type="checkbox"/>	_____															
<b>0 = Total Cover</b>				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>														

**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

[illegible]

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> Upland point of w-aeh-20200108-01, located within railroad corridor.	

**Hydrology**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
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	<input type="checkbox"/>		
2. _____	0	<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
7. _____	0	<input type="checkbox"/>		
<b>0 = Total Cover</b>				
<b>Sapling/Shrub Stratum</b> (Plot size: _____)				
1. <i>Rosa multiflora</i>	30	<input checked="" type="checkbox"/>	FACU	
2. <i>Platanus occidentalis</i>	5	<input type="checkbox"/>	FACW	
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
7. _____	0	<input type="checkbox"/>		
<b>35 = Total Cover</b>				
<b>Herb Stratum</b> (Plot size: _____)				
1. <i>Dipsacus fullonum</i>	20	<input checked="" type="checkbox"/>	FACU	
2. <i>Setaria faberi</i>	20	<input checked="" type="checkbox"/>	FACU	
3. <i>Poa pratensis</i>	10	<input type="checkbox"/>	FACU	
4. <i>Xanthium strumarium</i>	10	<input type="checkbox"/>	FAC	
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
7. _____	0	<input type="checkbox"/>		
8. _____	0	<input type="checkbox"/>		
9. _____	0	<input type="checkbox"/>		
10. _____	0	<input type="checkbox"/>		
11. _____	0	<input type="checkbox"/>		
12. _____	0	<input type="checkbox"/>		
<b>60 = Total Cover</b>				
<b>Woody Vine Stratum</b> (Plot size: _____)				
1. _____	0	<input type="checkbox"/>		
2. _____	0	<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
<b>0 = Total Cover</b>				

**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 <u>0</u>	x 1 = <u>0</u>
FACW species <u>5</u>	x 2 = <u>10</u>
FAC species <u>10</u>	x 3 = <u>30</u>
FACU species <u>80</u>	x 4 = <u>320</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>95</u> (A)	<u>360</u> (B)

Prevalence Index = B/A = 3.789

**Hydrophytic Vegetation Indicators:**

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☐ Prevalence Index is ≤ 3.0 <sup>1</sup>

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

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> 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.

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

[illegible]

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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.



**WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region**

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line      **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
<b>Remarks:</b> 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: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Prunus serotina</u>	<u>35</u>	<input checked="" type="checkbox"/>	FACU	Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>9</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>11.1%</u> (A/B)
2. <u>Acer saccharum</u>	<u>20</u>	<input checked="" type="checkbox"/>	FACU	
3. <u>Platanus occidentalis</u>	<u>10</u>	<input type="checkbox"/>	FACW	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u>)</b>				<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>40</u> x 2 = <u>80</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species <u>175</u> x 4 = <u>700</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>220</u> (A) <u>795</u> (B)  Prevalence Index = B/A = <u>3.614</u>
1. <u>Rosa multiflora</u>	<u>25</u>	<input checked="" type="checkbox"/>	FACU	
2. <u>Acer saccharum</u>	<u>15</u>	<input checked="" type="checkbox"/>	FACU	
3. <u>Rosa setigera</u>	<u>15</u>	<input checked="" type="checkbox"/>	FACU	
4. <u>Fraxinus pennsylvanica</u>	<u>5</u>	<input type="checkbox"/>	FACW	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Herb Stratum (Plot size: <u>5'</u>)</b>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Ageratina altissima</u>	<u>25</u>	<input checked="" type="checkbox"/>	FACU	
2. <u>Alliaria petiolata</u>	<u>20</u>	<input checked="" type="checkbox"/>	FACU	
3. <u>Lobelia siphilitica</u>	<u>20</u>	<input checked="" type="checkbox"/>	FACW	
4. <u>Phytolacca americana</u>	<u>20</u>	<input checked="" type="checkbox"/>	FACU	
5. <u>Geum canadense</u>	<u>5</u>	<input type="checkbox"/>	FAC	
6. <u>Solidago gigantea</u>	<u>5</u>	<input type="checkbox"/>	FACW	
<b>Woody Vine Stratum (Plot size: <u>30'</u>)</b>				<b>Definitions of Vegetation Strata</b>  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.   <b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
1. <u>Vitis riparia</u>	<u>0</u>	<input type="checkbox"/>	FAC	
2. _____	<u>0</u>	<input type="checkbox"/>	_____	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b>				
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.



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

[illegible]

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

### Hydric Soil Indicators:

- |   |   |
|---|---|
| <input type="checkbox"/> Histosol (A1)                        | <input checked="" type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                 | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)                  |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)                         |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                                   |
| <input type="checkbox"/> Stratified Layers (A5)               | <input type="checkbox"/> Depleted Matrix (F3)                                       |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input type="checkbox"/> Redox Dark Surface (F6)                                    |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Depleted Dark Surface (F7)                                 |
| <input type="checkbox"/> Sandy Muck Mineral (S1)              | <input type="checkbox"/> Redox Depressions (F8)                                     |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)             |   |
| <input type="checkbox"/> Sandy Redox (S5)                     |   |
| <input type="checkbox"/> Stripped Matrix (S6)                 |   |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |   |

## 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)

<sup>3</sup>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 observed. The sample point upl-jbl-20200106-01 did not meet the 3 criteria to be classified as a wetland.

**WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region****Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line**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.**

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): _____	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches): 14	<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
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: <u>10'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	0	<input type="checkbox"/>		Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	0	<input type="checkbox"/>		Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		Percent of dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)
7. _____	0	<input type="checkbox"/>		<b>Prevalence Index worksheet:</b>
0 = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>10'</u> )				Total % Cover of:      Multiply by:
1. <u>Pyrus communis</u>	5	<input type="checkbox"/>	UPL	OBL species <u>0</u> x 1 = <u>0</u>
2. <u>Quercus palustris</u>	15	<input checked="" type="checkbox"/>	FACW	FACW species <u>30</u> x 2 = <u>60</u>
3. <u>Rhamnus cathartica</u>	15	<input checked="" type="checkbox"/>	FAC	FAC species <u>30</u> x 3 = <u>90</u>
4. <u>Cornus obliqua</u>	5	<input type="checkbox"/>	FACW	FACU species <u>60</u> x 4 = <u>240</u>
5. _____	0	<input type="checkbox"/>		UPL species <u>5</u> x 5 = <u>25</u>
6. _____	0	<input type="checkbox"/>		Column Totals: <u>125</u> (A) <u>415</u> (B)
7. _____	0	<input type="checkbox"/>		Prevalence Index = B/A = <u>3.320</u>
40 = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: <u>5'</u> )				
1. <u>Poa pratensis</u>	25	<input checked="" type="checkbox"/>	FACU	
2. <u>Achillea millefolium</u>	15	<input type="checkbox"/>	FACU	
3. <u>Festuca arundinacea</u>	20	<input checked="" type="checkbox"/>	FACU	
4. <u>Symphotrichum lateriflorum</u>	15	<input type="checkbox"/>	FAC	
5. <u>Solidago gigantea</u>	10	<input type="checkbox"/>	FACW	
6. _____	0	<input type="checkbox"/>		
7. _____	0	<input type="checkbox"/>		
8. _____	0	<input type="checkbox"/>		
9. _____	0	<input type="checkbox"/>		
10. _____	0	<input type="checkbox"/>		
11. _____	0	<input type="checkbox"/>		
12. _____	0	<input type="checkbox"/>		
85 = Total Cover				<b>Definitions of Vegetation Strata:</b>  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.
Woody Vine Stratum (Plot size: <u>10'</u> )				
1. _____	0	<input type="checkbox"/>		
2. _____	0	<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
0 = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>

**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. Vegetation did not meet any of the hydrophytic indicators

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

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

[illegible]

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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.



**WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region****Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line**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.**

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> Upland 01 on slope near small brush pile on edge of residential mowed lawn area. Associated with wetland w-jbl-20200107-01.	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
<b>Remarks:</b> No wetland hydrology indicators observed			

**VEGETATION - Use scientific names of plants**Sampling Point: upl-jbl-20200107-01

Tree Stratum (Plot size: <u>10'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	0	<input type="checkbox"/>		Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	0	<input type="checkbox"/>		Total Number of Dominant Species Across All Strata: <u>6</u> (B)
3. _____	0	<input type="checkbox"/>		Percent of dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)
4. _____	0	<input type="checkbox"/>		<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species <u>80</u> x 4 = <u>320</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>105</u> (A) <u>375</u> (B) Prevalence Index = B/A = <u>3.571</u>
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
7. _____	0	<input type="checkbox"/>		
<u>0</u> = Total Cover				
<b>Sapling/Shrub Stratum (Plot size: <u>10'</u>)</b>				
1. <u>Cornus drummondii</u>	5	<input checked="" type="checkbox"/>	FAC	
2. _____	0	<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
7. _____	0	<input type="checkbox"/>		
<u>5</u> = Total Cover				
<b>Herb Stratum (Plot size: <u>5'</u>)</b>				
1. <u>Poa palustris</u>	20	<input checked="" type="checkbox"/>	FACW	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2. <u>Poa pratensis</u>	25	<input checked="" type="checkbox"/>	FACU	
3. <u>Glechoma hederacea</u>	15	<input checked="" type="checkbox"/>	FACU	
4. <u>Trifolium repens</u>	15	<input checked="" type="checkbox"/>	FACU	
5. <u>Conyza canadensis</u>	15	<input checked="" type="checkbox"/>	FACU	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
6. <u>Aquilegia canadensis</u>	10	<input type="checkbox"/>	FACU	
7. _____	0	<input type="checkbox"/>		
8. _____	0	<input type="checkbox"/>		
9. _____	0	<input type="checkbox"/>		<b>Definitions of Vegetation Strata:</b>  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.
10. _____	0	<input type="checkbox"/>		
11. _____	0	<input type="checkbox"/>		
12. _____	0	<input type="checkbox"/>		
<u>100</u> = Total Cover				
<b>Woody Vine Stratum (Plot size: <u>10'</u>)</b>				
1. _____	0	<input type="checkbox"/>		<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
2. _____	0	<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
<u>0</u> = Total Cover				

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

plot only includes hillside and does not include 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.



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

[illegible]

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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.

**WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region**

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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.**

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> Upland 03 on hillside. Scrub shrub area. Associated with wetland w-jbl-20200107-03.	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
<b>Remarks:</b> No wetland hydrology indicators observed.			



**VEGETATION - Use scientific names of plants**Sampling Point: upl-jbl-20200107-03

Tree Stratum (Plot size: <u>20'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Prunus serotina</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)
2. _____	<u>0</u>	<input type="checkbox"/>	_____	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u>)</b>		<u>15</u> = Total Cover		<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>35</u> x 2 = <u>70</u> FAC species <u>15</u> x 3 = <u>45</u> FACU species <u>65</u> x 4 = <u>260</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>115</u> (A) <u>375</u> (B)  Prevalence Index = B/A = <u>3.261</u>
1. <u>Alnus glutinosa</u>	<u>5</u>	<input type="checkbox"/>	<u>FACW</u>	
2. <u>Cornus alba</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
3. <u>Rosa multiflora</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Herb Stratum (Plot size: <u>5'</u>)</b>		<u>55</u> = Total Cover		<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Geum canadense</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. <u>Solidago canadensis</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
8. _____	<u>0</u>	<input type="checkbox"/>	_____	
9. _____	<u>0</u>	<input type="checkbox"/>	_____	
10. _____	<u>0</u>	<input type="checkbox"/>	_____	
11. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Woody Vine Stratum (Plot size: <u>20'</u>)</b>		<u>35</u> = Total Cover		<b>Definitions of Vegetation Strata:</b>  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.
1. <u>Lonicera japonica</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. _____	<u>0</u>	<input type="checkbox"/>	_____	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
		<u>10</u> = Total Cover		<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>

**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.

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

[illegible]

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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.



**WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region****Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line**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.**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/> <b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> Upland 04 on adjacent hillside. Associated with wetland w-jbl-20200107-04.	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
<b>Remarks:</b> No wetland hydrology indicators observed.			

**VEGETATION - Use scientific names of plants**Sampling Point: upl-jbl-20200107-04

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Quercus palustris</u>	<u>55</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>7</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>57.1%</u> (A/B)
2. <u>Prunus serotina</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
<u>75</u> = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>60</u> x 2 = <u>120</u> FAC species <u>25</u> x 3 = <u>75</u> FACU species <u>50</u> x 4 = <u>200</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>135</u> (A) <u>395</u> (B) Prevalence Index = B/A = <u>2.926</u>
<u>35</u> = Total Cover				
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u>)</b>				
1. <u>Rosa multiflora</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. <u>Frangula alnus</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
<u>35</u> = Total Cover				
<b>Herb Stratum (Plot size: <u>5'</u>)</b>				
1. <u>Solidago gigantea</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Geum canadense</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
8. _____	<u>0</u>	<input type="checkbox"/>	_____	
9. _____	<u>0</u>	<input type="checkbox"/>	_____	
10. _____	<u>0</u>	<input type="checkbox"/>	_____	
11. _____	<u>0</u>	<input type="checkbox"/>	_____	
12. _____	<u>0</u>	<input type="checkbox"/>	_____	
<u>15</u> = Total Cover				
<b>Woody Vine Stratum (Plot size: <u>30'</u>)</b>				
1. <u>Lonicera japonica</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	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.
2. _____	<u>0</u>	<input type="checkbox"/>	_____	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
<u>10</u> = Total Cover				
<u>10</u> = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 4 of the 7 dominant species were hydrophytic- the sample point meets the indicators of dominance test and prevalence index.				

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



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

[illegible]

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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.

**WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region****Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line**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.**

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> Upland 05 data point between associated wetland and Oak Street Extension. Associated with wetland w-jbl-20200107-05.	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
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	Dominance Test worksheet:
1. <i>Pyrus communis</i>	2	<input type="checkbox"/>	UPL	Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>40.0%</u> (A/B)
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
<b>Sapling/Shrub Stratum (Plot size: 15')</b>		<b>2 = Total Cover</b>		<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>15</u> x 2 = <u>30</u> FAC species <u>30</u> x 3 = <u>90</u> FACU species <u>40</u> x 4 = <u>160</u> UPL species <u>2</u> x 5 = <u>10</u> Column Totals: <u>87</u> (A) <u>290</u> (B) Prevalence Index = B/A = <u>3.333</u>
1. <i>Frangula alnus</i>	30	<input checked="" type="checkbox"/>	FAC	
2. <i>Rosa multiflora</i>	25	<input checked="" type="checkbox"/>	FACU	
3. <i>Cornus amomum</i>	10	<input type="checkbox"/>	FACW	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
<b>Herb Stratum (Plot size: 5')</b>		<b>65 = Total Cover</b>		<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <i>Symphyotrichum ericoides</i>	15	<input checked="" type="checkbox"/>	FACU	
2. <i>Solidago gigantea</i>	5	<input checked="" type="checkbox"/>	FACW	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
<b>Woody Vine Stratum (Plot size: 10')</b>		<b>20 = Total Cover</b>		<b>Definitions of Vegetation Strata:</b>  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.
1. _____	0	<input type="checkbox"/>	_____	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
<b>0 = Total Cover</b>				
<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>				
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.

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

[illegible]

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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.



**WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region**

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line      **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one required; check all that apply)</b> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<b>Secondary Indicators (minimum of 2 required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): 12 Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): 9 <b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
<b>Remarks:</b> 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: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	0	<input type="checkbox"/>	_____	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
	0	<b>= Total Cover</b>		

Sapling/Shrub Stratum (Plot size: <u>15'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Rosa multiflora</u>	30	<input checked="" type="checkbox"/>	FACU	
2. <u>Robinia pseudoacacia</u>	3	<input type="checkbox"/>	FACU	
3. <u>Lonicera maackii</u>	2	<input type="checkbox"/>	UPL	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
	35	<b>= Total Cover</b>		

Herb Stratum (Plot size: <u>5'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Symphotrichum ericoides</u>	20	<input checked="" type="checkbox"/>	FACU	
2. <u>Epilobium coloratum</u>	15	<input checked="" type="checkbox"/>	OBL	
3. <u>Symphotrichum novae-angliae</u>	5	<input type="checkbox"/>	FACW	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
8. _____	0	<input type="checkbox"/>	_____	
9. _____	0	<input type="checkbox"/>	_____	
10. _____	0	<input type="checkbox"/>	_____	
11. _____	0	<input type="checkbox"/>	_____	
12. _____	0	<input type="checkbox"/>	_____	
	40	<b>= Total Cover</b>		

Woody Vine Stratum (Plot size: <u>15'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Lonicera japonica</u>	5	<input checked="" type="checkbox"/>	FACU	
2. <u>Rosa setigera</u>	5	<input checked="" type="checkbox"/>	FACU	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
	10	<b>= Total Cover</b>		

**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 <u>15</u>	x 1 =	<u>15</u>
FACW species <u>5</u>	x 2 =	<u>10</u>
FAC species <u>0</u>	x 3 =	<u>0</u>
FACU species <u>63</u>	x 4 =	<u>252</u>
UPL species <u>2</u>	x 5 =	<u>10</u>
Column Totals: <u>85</u> (A)		<u>287</u> (B)

Prevalence Index = B/A = 3.376

**Hydrophytic Vegetation Indicators:**

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☐ Prevalence Index is ≤ 3.0 <sup>1</sup>

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

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> 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.



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

[illegible]

<sup>1</sup> Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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 vegetation or soil criteria.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	7
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	4
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>			
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	Dominance Test worksheet:
1. <u>Crataegus crus-galli</u>	30	<input checked="" type="checkbox"/>	FAC	Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>8</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>37.5%</u> (A/B)
2. <u>Acer rubrum</u>	5	<input type="checkbox"/>	FAC	
3. _____	_____	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
<b>Sapling/Shrub Stratum (Plot size: 15' r )</b> 35 = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>60</u> x 3 = <u>180</u> FACU species <u>35</u> x 4 = <u>140</u> UPL species <u>5</u> x 5 = <u>25</u> Column Totals: <u>100</u> (A) <u>345</u> (B)  Prevalence Index = B/A = <u>3.450</u>
1. <u>Rhamnus cathartica</u>	10	<input checked="" type="checkbox"/>	FAC	
2. <u>Betula alleghaniensis</u>	15	<input checked="" type="checkbox"/>	FAC	
3. <u>Rosa multiflora</u>	15	<input checked="" type="checkbox"/>	FACU	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
<b>Herb Stratum (Plot size: 5' r )</b> 40 = Total Cover				
1. <u>Solidago altissima</u>	10	<input checked="" type="checkbox"/>	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Symphotrichum pilosum</u>	5	<input checked="" type="checkbox"/>	FACU	
3. <u>Fragaria virginiana</u>	5	<input checked="" type="checkbox"/>	FACU	
4. <u>Rubus occidentalis</u>	5	<input checked="" type="checkbox"/>	UPL	
5. _____	_____	<input type="checkbox"/>	_____	
6. _____	_____	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
8. _____	0	<input type="checkbox"/>	_____	
9. _____	0	<input type="checkbox"/>	_____	
10. _____	0	<input type="checkbox"/>	_____	
11. _____	0	<input type="checkbox"/>	_____	
12. _____	0	<input type="checkbox"/>	_____	
<b>Woody Vine Stratum (Plot size: 30' r )</b> 25 = Total Cover				<b>Definitions of Vegetation Strata</b>  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.
1. _____	0	<input type="checkbox"/>	_____	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
0 = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.

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

[illegible]

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

### Hydric Soil Indicators:

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                 | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)              |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)               | <input checked="" type="checkbox"/> Depleted Matrix (F3)                 |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Muck Mineral (S1)              | <input type="checkbox"/> Redox Depressions (F8)                          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)             |  |
| <input type="checkbox"/> Sandy Redox (S5)                     |  |
| <input type="checkbox"/> Stripped Matrix (S6)                 |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |  |

Indicators for Problematic Hydric Soils : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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.



**WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region**

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
<b>Remarks:</b> No primary hydrology indicators present.			

Upland RLP-10  
**VEGETATION - Use scientific names of plant**

Sampling Point: upl-bl-20200108-01

Tree Stratum (Plot size: <u>30' r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <u>Populus tremuloides</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)	
2. <u>Acer rubrum</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	Total Number of Dominant Species Across All Strata: <u>9</u> (B)	
3. <u>Quercus alba</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	Percent of dominant Species That Are OBL, FACW, or FAC: <u>11.1%</u> (A/B)	
4. _____	<u>0</u>	<input type="checkbox"/>	_____		
5. _____	<u>0</u>	<input type="checkbox"/>	_____		
6. _____	<u>0</u>	<input type="checkbox"/>	_____		
7. _____	<u>0</u>	<input type="checkbox"/>	_____		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15' r</u> )				<b>Prevalence Index worksheet:</b>	
				Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>35</u> x 3 = <u>105</u> FACU species <u>125</u> x 4 = <u>500</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>160</u> (A) <u>605</u> (B) Prevalence Index = B/A = <u>3.781</u>	
				<b>Hydrophytic Vegetation Indicators:</b>	
				<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				<b>Definitions of Vegetation Strata</b>	
				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.	
				<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Herb Stratum</b> (Plot size: <u>5' r</u> )					
1. <u>Solidago altissima</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		
2. <u>Symphotrichum pilosum</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		
3. <u>Lonicera japonica</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		
4. _____	<u>0</u>	<input type="checkbox"/>	_____		
5. _____	<u>0</u>	<input type="checkbox"/>	_____		
6. _____	<u>0</u>	<input type="checkbox"/>	_____		
7. _____	<u>0</u>	<input type="checkbox"/>	_____		
8. _____	<u>0</u>	<input type="checkbox"/>	_____		
9. _____	<u>0</u>	<input type="checkbox"/>	_____		
10. _____	<u>0</u>	<input type="checkbox"/>	_____		
11. _____	<u>0</u>	<input type="checkbox"/>	_____		
12. _____	<u>0</u>	<input type="checkbox"/>	_____		
<b>Woody Vine Stratum</b> (Plot size: <u>30' r</u> )					
1. <u>Lonicera japonica</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FACU</u>		
2. _____	<u>0</u>	<input type="checkbox"/>	_____		
3. _____	<u>0</u>	<input type="checkbox"/>	_____		
4. _____	<u>0</u>	<input type="checkbox"/>	_____		
<div style="display: flex; justify-content: space-between;"> <span><u>5</u> = Total Cover</span> <span><u>50</u> = Total Cover</span> </div>					
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.



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

[illegible]

<sup>1</sup> Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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.

## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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 ☐

Wetland Hydrology Present? Yes ☐ No ☒

Is the Sampled Area within a Wetland? 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)

- |  |  |
|--|--|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Water-Stained Leaves (B9)                     |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Fauna (B13)                           |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Marl Deposits (B15)                           |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                    |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift deposits (B3)                       | <input type="checkbox"/> Presence of Reduced Iron (C4)                 |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)    |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                        |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                    |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   |  |

Secondary Indicators (minimum of 2 required)

- |  |
|--|
| <input type="checkbox"/> Surface Soil Cracks (B6)                  |
| <input type="checkbox"/> Drainage Patterns (B10)                   |
| <input type="checkbox"/> Moss Trim Lines (B16)                     |
| <input type="checkbox"/> Dry Season Water Table (C2)               |
| <input type="checkbox"/> Crayfish Burrows (C8)                     |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Stunted or Stressed Plants (D1)           |
| <input type="checkbox"/> Geomorphic Position (D2)                  |
| <input type="checkbox"/> Shallow Aquitard (D3)                     |
| <input type="checkbox"/> Microtopographic Relief (D4)              |
| <input type="checkbox"/> FAC-neutral Test (D5)                     |

**Field Observations:**

Surface Water Present? Yes ☐ No ☒ Depth (inches): 0

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? Yes ☐ No ☒

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

**Remarks:**

No hydrology indicators present.



**VEGETATION - Use scientific names of plants**Sampling Point: upl-bl-20200107-05

Tree Stratum (Plot size: <u>30' r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Ulmus americana</u>	<u>5</u>	<input type="checkbox"/>	FACW	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)
2. <u>Populus tremuloides</u>	<u>50</u>	<input checked="" type="checkbox"/>	FACU	
3. <u>Acer rubrum</u>	<u>5</u>	<input type="checkbox"/>	FAC	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>60 = Total Cover</b>				<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>15</u> x 2 = <u>30</u> FAC species <u>55</u> x 3 = <u>165</u> FACU species <u>110</u> x 4 = <u>440</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>180</u> (A) <u>635</u> (B)  Prevalence Index = B/A = <u>3.528</u>
<b>Sapling/Shrub Stratum (Plot size: <u>15' r</u> )</b>				
1. <u>Acer rubrum</u>	<u>30</u>	<input checked="" type="checkbox"/>	FAC	
2. <u>Ulmus americana</u>	<u>10</u>	<input checked="" type="checkbox"/>	FACW	
3. <u>Viburnum lentago</u>	<u>10</u>	<input checked="" type="checkbox"/>	FAC	
4. <u>Lonicera morrowii</u>	<u>10</u>	<input checked="" type="checkbox"/>	FACU	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>60 = Total Cover</b>				
<b>Herb Stratum (Plot size: <u>5' r</u> )</b>				
1. <u>Fallopia japonica</u>	<u>40</u>	<input checked="" type="checkbox"/>	FACU	
2. <u>Lonicera japonica</u>	<u>10</u>	<input type="checkbox"/>	FACU	
3. <u>Hydrophyllum canadense</u>	<u>10</u>	<input type="checkbox"/>	FAC	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
8. _____	<u>0</u>	<input type="checkbox"/>	_____	
9. _____	<u>0</u>	<input type="checkbox"/>	_____	
10. _____	<u>0</u>	<input type="checkbox"/>	_____	
11. _____	<u>0</u>	<input type="checkbox"/>	_____	
12. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>60 = Total Cover</b>				
<b>Woody Vine Stratum (Plot size: <u>30' r</u> )</b>				<b>Definitions of Vegetation Strata</b>  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.
1. _____	<u>0</u>	<input type="checkbox"/>	_____	
2. _____	<u>0</u>	<input type="checkbox"/>	_____	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>0 = Total Cover</b>				
<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>				

**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.

[illegible]



## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	0
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
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: <u>30' r</u> )	Absolute % Cover	Dominant Species?	Indicator Status																									
1. <u>Quercus rubra</u>	5	<input checked="" type="checkbox"/>	FACU	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)																								
2. <u>Quercus palustris</u>	15	<input checked="" type="checkbox"/>	FACW																									
3. <u>Quercus alba</u>	5	<input checked="" type="checkbox"/>	FACU																									
4. _____	0	<input type="checkbox"/>	_____																									
5. _____	0	<input type="checkbox"/>	_____																									
6. _____	0	<input type="checkbox"/>	_____																									
7. _____	0	<input type="checkbox"/>	_____																									
<b>25 = Total Cover</b>				<b>Prevalence Index worksheet:</b> <table style="width: 100%;"> <tr> <td style="width: 40%;">Total % Cover of:</td> <td style="width: 20%;">Multiply by:</td> <td style="width: 40%;"></td> </tr> <tr> <td>OBL species <u>15</u></td> <td>x 1 =</td> <td><u>15</u></td> </tr> <tr> <td>FACW species <u>30</u></td> <td>x 2 =</td> <td><u>60</u></td> </tr> <tr> <td>FAC species <u>15</u></td> <td>x 3 =</td> <td><u>45</u></td> </tr> <tr> <td>FACU species <u>115</u></td> <td>x 4 =</td> <td><u>460</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 =</td> <td><u>0</u></td> </tr> <tr> <td><b>Column Totals:</b> <u>175</u> (A)</td> <td></td> <td><u>580</u> (B)</td> </tr> <tr> <td colspan="3">Prevalence Index = B/A = <u>3.314</u></td> </tr> </table>	Total % Cover of:	Multiply by:		OBL species <u>15</u>	x 1 =	<u>15</u>	FACW species <u>30</u>	x 2 =	<u>60</u>	FAC species <u>15</u>	x 3 =	<u>45</u>	FACU species <u>115</u>	x 4 =	<u>460</u>	UPL species <u>0</u>	x 5 =	<u>0</u>	<b>Column Totals:</b> <u>175</u> (A)		<u>580</u> (B)	Prevalence Index = B/A = <u>3.314</u>		
Total % Cover of:	Multiply by:																											
OBL species <u>15</u>	x 1 =	<u>15</u>																										
FACW species <u>30</u>	x 2 =	<u>60</u>																										
FAC species <u>15</u>	x 3 =	<u>45</u>																										
FACU species <u>115</u>	x 4 =	<u>460</u>																										
UPL species <u>0</u>	x 5 =	<u>0</u>																										
<b>Column Totals:</b> <u>175</u> (A)		<u>580</u> (B)																										
Prevalence Index = B/A = <u>3.314</u>																												
<b>35 = Total Cover</b>																												
<b>Sapling/Shrub Stratum (Plot size: <u>15' r</u> )</b>																												
1. <u>Rosa multiflora</u>	20	<input checked="" type="checkbox"/>	FACU																									
2. <u>Fraxinus pennsylvanica</u>	15	<input checked="" type="checkbox"/>	FACW																									
3. _____	0	<input type="checkbox"/>	_____																									
4. _____	0	<input type="checkbox"/>	_____																									
5. _____	0	<input type="checkbox"/>	_____																									
6. _____	0	<input type="checkbox"/>	_____																									
7. _____	0	<input type="checkbox"/>	_____																									
<b>35 = Total Cover</b>																												
<b>Herb Stratum (Plot size: <u>5' r</u> )</b>																												
1. <u>Solidago altissima</u>	60	<input checked="" type="checkbox"/>	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> <b>Rapid Test for Hydrophytic Vegetation</b> <input type="checkbox"/> <b>Dominance Test is &gt; 50%</b> <input type="checkbox"/> <b>Prevalence Index is ≤3.0<sup>1</sup></b> <input type="checkbox"/> <b>Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</b> <input type="checkbox"/> <b>Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</b>  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																								
2. <u>Scirpus atrovirens</u>	15	<input type="checkbox"/>	OBL																									
3. <u>Carex spicata</u>	15	<input type="checkbox"/>	FACU																									
4. <u>Geum canadense</u>	5	<input type="checkbox"/>	FAC																									
5. <u>Poa pratensis</u>	10	<input type="checkbox"/>	FACU																									
6. <u>Carex blanda</u>	10	<input type="checkbox"/>	FAC																									
7. _____	0	<input type="checkbox"/>	_____																									
8. _____	0	<input type="checkbox"/>	_____																									
9. _____	0	<input type="checkbox"/>	_____																									
10. _____	0	<input type="checkbox"/>	_____																									
11. _____	0	<input type="checkbox"/>	_____																									
12. _____	0	<input type="checkbox"/>	_____																									
<b>115 = Total Cover</b>																												
<b>Woody Vine Stratum (Plot size: <u>30' r</u> )</b>																												
1. _____	0	<input type="checkbox"/>	_____	<b>Definitions of Vegetation Strata</b>  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.																								
2. _____	0	<input type="checkbox"/>	_____																									
3. _____	0	<input type="checkbox"/>	_____																									
4. _____	0	<input type="checkbox"/>	_____																									
<b>0 = Total Cover</b>																												
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> Photos provided in Appendix D.  No hydrophytic vegetation indicators present.				<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>																								

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

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

[illegible]

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

- ☐ 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)

- ☐ 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)

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

Type: \_\_\_\_\_

Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes ☐ No ☒

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.



**WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region**

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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.**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/> <b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
<b>Remarks:</b> No hydrology indicators present.			

**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. <i>Crataegus crus-galli</i>	5	<input checked="" type="checkbox"/>	FAC		
2. _____	_____	<input type="checkbox"/>	_____		
3. _____	0	<input type="checkbox"/>	_____		
4. _____	0	<input type="checkbox"/>	_____		
5. _____	0	<input type="checkbox"/>	_____		
6. _____	0	<input type="checkbox"/>	_____		
7. _____	0	<input type="checkbox"/>	_____		
			5 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15' r )			Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Lonicera morrowii</i>	15	<input checked="" type="checkbox"/>	FACU		
2. <i>Rhamnus cathartica</i>	40	<input checked="" type="checkbox"/>	FAC		
3. <i>Rosa multiflora</i>	10	<input type="checkbox"/>	FACU		
4. <i>Rhus typhina</i>	5	<input type="checkbox"/>	UPL		
5. <i>Viburnum lentago</i>	5	<input type="checkbox"/>	FAC		
6. _____	0	<input type="checkbox"/>	_____		
7. _____	0	<input type="checkbox"/>	_____		
			75 = Total Cover		
Herb Stratum (Plot size: 5' r )			Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Cornus racemosa</i>	5	<input checked="" type="checkbox"/>	FAC		
2. <i>Parathelypteris noveboracensis</i>	5	<input checked="" type="checkbox"/>	FAC		
3. _____	0	<input type="checkbox"/>	_____		
4. _____	0	<input type="checkbox"/>	_____		
5. _____	0	<input type="checkbox"/>	_____		
6. _____	0	<input type="checkbox"/>	_____		
7. _____	0	<input type="checkbox"/>	_____		
8. _____	0	<input type="checkbox"/>	_____		
9. _____	0	<input type="checkbox"/>	_____		
10. _____	0	<input type="checkbox"/>	_____		
11. _____	0	<input type="checkbox"/>	_____		
12. _____	0	<input type="checkbox"/>	_____		
			10 = Total Cover		
Woody Vine Stratum (Plot size: 30'r )			Absolute % Cover	Dominant Species?	Indicator Status
1. _____	0	<input type="checkbox"/>	_____		
2. _____	0	<input type="checkbox"/>	_____		
3. _____	0	<input type="checkbox"/>	_____		
4. _____	0	<input type="checkbox"/>	_____		
			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 <span style="float: right;">0</span>	x 1 = <span style="float: right;">0</span>
FACW species <span style="float: right;">0</span>	x 2 = <span style="float: right;">0</span>
FAC species <span style="float: right;">60</span>	x 3 = <span style="float: right;">180</span>
FACU species <span style="float: right;">25</span>	x 4 = <span style="float: right;">100</span>
UPL species <span style="float: right;">5</span>	x 5 = <span style="float: right;">25</span>
Column Totals: <span style="float: right;">90 (A)</span>	<span style="float: right;">305 (B)</span>

Prevalence Index = B/A = 3.389

**Hydrophytic Vegetation Indicators:**

☐ Rapid Test for Hydrophytic Vegetation

☒ Dominance Test is > 50%

☐ Prevalence Index is ≤ 3.0 <sup>1</sup>

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

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> 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.

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

[illegible]

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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)

<sup>3</sup>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.



## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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 - Jintown 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**

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
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-bl-20200107-03

Tree Stratum (Plot size: <u>30' r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Quercus rubra</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)
2. <u>Acer rubrum</u>	<u>10</u>	<input type="checkbox"/>	<u>FAC</u>	
3. <u>Quercus alba</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>55 = Total Cover</b>				<b>Prevalence Index worksheet:</b>  Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>25</u> x 3 = <u>75</u> FACU species <u>55</u> x 4 = <u>220</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>335</u> (B)  Prevalence Index = B/A = <u>3.350</u>
<b>Sapling/Shrub Stratum (Plot size: <u>15' r</u> )</b>				
1. <u>Lindera benzoin</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
2. <u>Smilax glauca</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. <u>Acer rubrum</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> <b>Rapid Test for Hydrophytic Vegetation</b> <input type="checkbox"/> <b>Dominance Test is &gt; 50%</b> <input type="checkbox"/> <b>Prevalence Index is ≤3.0<sup>1</sup></b> <input type="checkbox"/> <b>Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</b> <input type="checkbox"/> <b>Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</b>  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>40 = Total Cover</b>				
<b>Herb Stratum (Plot size: <u>5' r</u> )</b>				
1. <u>Carex blanda</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. _____	<u>0</u>	<input type="checkbox"/>	_____	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
8. _____	<u>0</u>	<input type="checkbox"/>	_____	<b>Definitions of Vegetation Strata</b>  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.
9. _____	<u>0</u>	<input type="checkbox"/>	_____	
10. _____	<u>0</u>	<input type="checkbox"/>	_____	
11. _____	<u>0</u>	<input type="checkbox"/>	_____	
12. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>5 = Total Cover</b>				
<b>Woody Vine Stratum (Plot size: <u>30' r</u> )</b>				
1. _____	<u>0</u>	<input type="checkbox"/>	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
2. _____	<u>0</u>	<input type="checkbox"/>	_____	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>0 = Total Cover</b>				
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.

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

[illegible]

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

### Hydric Soil Indicators:

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                 | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)              |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)               | <input checked="" type="checkbox"/> Depleted Matrix (F3)                 |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input checked="" type="checkbox"/> Redox Dark Surface (F6)              |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Muck Mineral (S1)              | <input type="checkbox"/> Redox Depressions (F8)                          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)             |  |
| <input type="checkbox"/> Sandy Redox (S5)                     |  |
| <input type="checkbox"/> Stripped Matrix (S6)                 |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |  |

## 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)

<sup>3</sup>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.



## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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 - Jintown 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**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
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: <u>30' r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:																																																	
1. <u>Quercus rubra</u>	40	<input checked="" type="checkbox"/>	FACU	Number of Dominant Species That are OBL, FACW, or FAC:	<u>4</u> (A)																																																
2. <u>Quercus palustris</u>	15	<input checked="" type="checkbox"/>	FACW	Total Number of Dominant Species Across All Strata:	<u>5</u> (B)																																																
3. <u>Fagus grandifolia</u>	10	<input type="checkbox"/>	FACU	Percent of dominant Species That Are OBL, FACW, or FAC:	<u>80.0%</u> (A/B)																																																
4. _____	0	<input type="checkbox"/>																																																			
5. _____	0	<input type="checkbox"/>																																																			
6. _____	0	<input type="checkbox"/>																																																			
7. _____	0	<input type="checkbox"/>																																																			
			<b>65 = Total Cover</b>																																																		
Sapling/Shrub Stratum (Plot size: <u>15' r</u> )																																																					
1. <u>Ulmus americana</u>	15	<input checked="" type="checkbox"/>	FACW																																																		
2. <u>Acer rubrum</u>	5	<input type="checkbox"/>	FAC																																																		
3. <u>Smilax glauca</u>	5	<input type="checkbox"/>	FACU																																																		
4. <u>Lindera benzoin</u>	10	<input checked="" type="checkbox"/>	FACW																																																		
5. _____	0	<input type="checkbox"/>																																																			
6. _____	0	<input type="checkbox"/>																																																			
7. _____	0	<input type="checkbox"/>																																																			
			<b>35 = Total Cover</b>																																																		
Herb Stratum (Plot size: <u>5' r</u> )																																																					
1. <u>Carex blanda</u>	5	<input checked="" type="checkbox"/>	FAC																																																		
2. _____	0	<input type="checkbox"/>																																																			
3. _____	0	<input type="checkbox"/>																																																			
4. _____	0	<input type="checkbox"/>																																																			
5. _____	0	<input type="checkbox"/>																																																			
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10. _____	0	<input type="checkbox"/>																																																			
11. _____	0	<input type="checkbox"/>																																																			
12. _____	0	<input type="checkbox"/>																																																			
			<b>5 = Total Cover</b>																																																		
Woody Vine Stratum (Plot size: <u>30' r</u> )																																																					
1. _____	0	<input type="checkbox"/>																																																			
2. _____	0	<input type="checkbox"/>																																																			
3. _____	0	<input type="checkbox"/>																																																			
4. _____	0	<input type="checkbox"/>																																																			
			<b>0 = Total Cover</b>																																																		
				<b>Prevalence Index worksheet:</b> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Total % Cover of:</td> <td style="width: 10%;"></td> <td style="width: 10%;">Multiply by:</td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td>OBL species</td> <td style="text-align: center;">0</td> <td>x 1 =</td> <td style="text-align: center;">0</td> <td></td> <td></td> </tr> <tr> <td>FACW species</td> <td style="text-align: center;">40</td> <td>x 2 =</td> <td style="text-align: center;">80</td> <td></td> <td></td> </tr> <tr> <td>FAC species</td> <td style="text-align: center;">10</td> <td>x 3 =</td> <td style="text-align: center;">30</td> <td></td> <td></td> </tr> <tr> <td>FACU species</td> <td style="text-align: center;">55</td> <td>x 4 =</td> <td style="text-align: center;">220</td> <td></td> <td></td> </tr> <tr> <td>UPL species</td> <td style="text-align: center;">0</td> <td>x 5 =</td> <td style="text-align: center;">0</td> <td></td> <td></td> </tr> <tr> <td>Column Totals:</td> <td style="text-align: center;">105</td> <td>(A)</td> <td style="text-align: center;">330</td> <td>(B)</td> <td></td> </tr> <tr> <td colspan="3">Prevalence Index = B/A =</td> <td colspan="3" style="text-align: center;"><u>3.143</u></td> </tr> </table>		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 =			<u>3.143</u>		
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 =			<u>3.143</u>																																																		
				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																																																	
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																																	
				<b>Definitions of Vegetation Strata</b> <p>Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.</p> <p>Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall..</p> <p>Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p>Woody vine - All woody vines greater than 3.28 ft in height.</p>																																																	
				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>																																																	
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> <p>Photos provided in Appendix D.</p> <p>Hydrophytic vegetation present via Dominance Test indicator, though location does not pass Prevalence Index indicator.</p>																																																					

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

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

[illegible]

<sup>1</sup> Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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)

<sup>3</sup>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.



## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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 - Jintown 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.**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	9
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	Depth (inches):	4
<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>			
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.			

**Sampling Point:** upl-bl-20200106-03

Northcentral and Northeast Region - Version 2.0





## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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 - Jintown 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**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
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: <u>30' r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:																																
1. <u>Acer rubrum</u>	50	<input checked="" type="checkbox"/>	FAC	Number of Dominant Species That are OBL, FACW, or FAC: <u>5</u> (A)  Total Number of Dominant Species Across All Strata: <u>7</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>71.4%</u> (A/B)																																
2. <u>Acer saccharum</u>	20	<input checked="" type="checkbox"/>	FACU																																	
3. <u>Ulmus americana</u>	10	<input type="checkbox"/>	FACW																																	
4. _____	0	<input type="checkbox"/>	_____																																	
5. _____	0	<input type="checkbox"/>	_____	<b>Prevalence Index worksheet:</b> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;">Total % Cover of:</td> <td style="width: 10%;"></td> <td style="width: 10%;">Multiply by:</td> <td style="width: 40%;"></td> </tr> <tr> <td>OBL species</td> <td style="text-align: center;">13</td> <td>x 1 =</td> <td style="text-align: center;">13</td> </tr> <tr> <td>FACW species</td> <td style="text-align: center;">10</td> <td>x 2 =</td> <td style="text-align: center;">20</td> </tr> <tr> <td>FAC species</td> <td style="text-align: center;">90</td> <td>x 3 =</td> <td style="text-align: center;">270</td> </tr> <tr> <td>FACU species</td> <td style="text-align: center;">35</td> <td>x 4 =</td> <td style="text-align: center;">140</td> </tr> <tr> <td>UPL species</td> <td style="text-align: center;">0</td> <td>x 5 =</td> <td style="text-align: center;">0</td> </tr> <tr> <td>Column Totals:</td> <td style="text-align: center;">148</td> <td>(A)</td> <td style="text-align: center;">443 (B)</td> </tr> <tr> <td colspan="4">Prevalence Index = B/A = <u>2.993</u></td> </tr> </table>	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 = <u>2.993</u>			
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 = <u>2.993</u>																																				
6. _____	0	<input type="checkbox"/>	_____																																	
7. _____	0	<input type="checkbox"/>	_____																																	
80 = Total Cover																																				
<b>Sapling/Shrub Stratum (Plot size: <u>15' r</u> )</b>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																																
1. <u>Acer rubrum</u>	30	<input checked="" type="checkbox"/>	FAC																																	
2. <u>Hamamelis virginiana</u>	10	<input checked="" type="checkbox"/>	FACU																																	
3. <u>Rosa multiflora</u>	5	<input type="checkbox"/>	FACU																																	
4. _____	0	<input type="checkbox"/>	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																
5. _____	0	<input type="checkbox"/>	_____																																	
6. _____	0	<input type="checkbox"/>	_____																																	
7. _____	0	<input type="checkbox"/>	_____																																	
45 = Total Cover				<b>Definitions of Vegetation Strata</b>  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.																																
<b>Herb Stratum (Plot size: <u>5' r</u> )</b>																																				
1. <u>Carex frankii</u>	10	<input checked="" type="checkbox"/>	OBL																																	
2. <u>Scirpus atrovirens</u>	3	<input type="checkbox"/>	OBL																																	
3. <u>Carex blanda</u>	5	<input checked="" type="checkbox"/>	FAC	Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>																																
4. <u>Persicaria virginiana</u>	5	<input checked="" type="checkbox"/>	FAC																																	
5. _____	0	<input type="checkbox"/>	_____																																	
6. _____	0	<input type="checkbox"/>	_____																																	
7. _____	0	<input type="checkbox"/>	_____	<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> Photos provided in Appendix D.  Hydrophytic vegetation present via Dominance Test and Prevalence Index indicators. Herbaceous vegetation limited to small depression area in woodlot.																																
8. _____	0	<input type="checkbox"/>	_____																																	
9. _____	0	<input type="checkbox"/>	_____																																	
10. _____	0	<input type="checkbox"/>	_____																																	
11. _____	0	<input type="checkbox"/>	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>																																
12. _____	0	<input type="checkbox"/>	_____																																	
23 = Total Cover																																				
<b>Woody Vine Stratum (Plot size: <u>30' r</u> )</b>																																				
1. _____	0	<input type="checkbox"/>	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>																																
2. _____	0	<input type="checkbox"/>	_____																																	
3. _____	0	<input type="checkbox"/>	_____																																	
4. _____	0	<input type="checkbox"/>	_____																																	
0 = Total Cover																																				

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

[illegible]



## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> Upland was taken south of the wetland.	

**Hydrology**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
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: <u>30ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <u>Acer rubrum</u>	25	<input checked="" type="checkbox"/>	FAC	Number of Dominant Species That are OBL, FACW, or FAC:	<u>3</u> (A)
2. <u>Acer negundo</u>	15	<input checked="" type="checkbox"/>	FAC	Total Number of Dominant Species Across All Strata:	<u>5</u> (B)
3. <u>Fagus grandifolia</u>	15	<input checked="" type="checkbox"/>	FACU	Percent of dominant Species That Are OBL, FACW, or FAC:	<u>60.0%</u> (A/B)
4. <u>Ulmus rubra</u>	5	<input type="checkbox"/>	FAC		
5. <u>Quercus palustris</u>	5	<input type="checkbox"/>	FACW		
6. _____	0	<input type="checkbox"/>			
7. _____	0	<input type="checkbox"/>			
<b>65 = Total Cover</b>					
<b>Sapling/Shrub Stratum (Plot size: <u>15ft</u> )</b>					
1. <u>Acer negundo</u>	15	<input checked="" type="checkbox"/>	FAC		
2. <u>Fagus grandifolia</u>	10	<input checked="" type="checkbox"/>	FACU		
3. <u>Ulmus rubra</u>	5	<input type="checkbox"/>	FAC		
4. _____	0	<input type="checkbox"/>			
5. _____	0	<input type="checkbox"/>			
6. _____	0	<input type="checkbox"/>			
7. _____	0	<input type="checkbox"/>			
<b>30 = Total Cover</b>					
<b>Herb Stratum (Plot size: <u>5ft</u> )</b>					
1. _____	0	<input type="checkbox"/>			
2. _____	0	<input type="checkbox"/>			
3. _____	0	<input type="checkbox"/>			
4. _____	0	<input type="checkbox"/>			
5. _____	0	<input type="checkbox"/>			
6. _____	0	<input type="checkbox"/>			
7. _____	0	<input type="checkbox"/>			
8. _____	0	<input type="checkbox"/>			
9. _____	0	<input type="checkbox"/>			
10. _____	0	<input type="checkbox"/>			
11. _____	0	<input type="checkbox"/>			
12. _____	0	<input type="checkbox"/>			
<b>0 = Total Cover</b>					
<b>Woody Vine Stratum (Plot size: <u>30ft</u> )</b>					
1. _____	0	<input type="checkbox"/>			
2. _____	0	<input type="checkbox"/>			
3. _____	0	<input type="checkbox"/>			
4. _____	0	<input type="checkbox"/>			
<b>0 = Total Cover</b>					
				<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>5</u> x 2 = <u>10</u> FAC species <u>65</u> x 3 = <u>195</u> FACU species <u>25</u> x 4 = <u>100</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>95</u> (A) <u>305</u> (B) Prevalence Index = B/A = <u>3.211</u>	
				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				<b>Definitions of Vegetation Strata</b> 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.	
				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.

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

[illegible]

<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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)

<sup>3</sup>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.



## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> Upland was taken south of the wetland.	

**Hydrology**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
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	Dominance Test worksheet:
1. _____	0	<input type="checkbox"/>	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
<b>Sapling/Shrub Stratum (Plot size: 15ft )</b> _____ = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>40</u> x 2 = <u>80</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species <u>55</u> x 4 = <u>220</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>315</u> (B)  Prevalence Index = B/A = <u>3.150</u>
1. <i>Populus deltoides</i>	5	<input checked="" type="checkbox"/>	FAC	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
<b>Herb Stratum (Plot size: 5ft )</b> _____ = Total Cover				
1. <i>Phalaris arundinacea</i>	40	<input checked="" type="checkbox"/>	FACW	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <i>Schedonorus arundinaceus</i>	25	<input checked="" type="checkbox"/>	FACU	
3. <i>Solidago canadensis</i>	10	<input type="checkbox"/>	FACU	
4. <i>Symphotrichum ericoides</i>	10	<input type="checkbox"/>	FACU	
5. <i>Poa pratensis</i>	10	<input type="checkbox"/>	FACU	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
8. _____	0	<input type="checkbox"/>	_____	
9. _____	0	<input type="checkbox"/>	_____	
10. _____	0	<input type="checkbox"/>	_____	
11. _____	0	<input type="checkbox"/>	_____	
12. _____	0	<input type="checkbox"/>	_____	
<b>Woody Vine Stratum (Plot size: 30ft )</b> _____ = Total Cover				<b>Definitions of Vegetation Strata</b>  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.
1. _____	0	<input type="checkbox"/>	_____	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
_____ = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.

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

[illegible]

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

### Hydric Soil Indicators:

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                 | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)              |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)               | <input checked="" type="checkbox"/> Depleted Matrix (F3)                 |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Muck Mineral (S1)              | <input type="checkbox"/> Redox Depressions (F8)                          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)             |  |
| <input type="checkbox"/> Sandy Redox (S5)                     |  |
| <input type="checkbox"/> Stripped Matrix (S6)                 |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |  |

## 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)

<sup>3</sup>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.



**WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region**

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line      **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/> <b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> Upland was taken southeast of an existing wetland.	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
<b>Remarks:</b> No wetland hydrology was present.			

Upland RLP-20  
**VEGETATION - Use scientific names of plant**

Sampling Point: upl-aeh-20200107-05

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Prunus serotina</u>	20	<input checked="" type="checkbox"/>	FACU	Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>75.0%</u> (A/B)
2. <u>Quercus palustris</u>	5	<input type="checkbox"/>	FACW	
3. <u>Acer rubrum</u>	35	<input checked="" type="checkbox"/>	FAC	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
<b>60 = Total Cover</b>				<b>Prevalence Index worksheet:</b>  Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>15</u> x 2 = <u>30</u> FAC species <u>60</u> x 3 = <u>180</u> FACU species <u>25</u> x 4 = <u>100</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>310</u> (B)  Prevalence Index = B/A = <u>3.100</u>
<b>Sapling/Shrub Stratum (Plot size: <u>15ft</u> )</b>				
1. <u>Acer rubrum</u>	25	<input checked="" type="checkbox"/>	FAC	
2. <u>Fagus grandifolia</u>	5	<input type="checkbox"/>	FACU	
3. <u>Quercus palustris</u>	10	<input checked="" type="checkbox"/>	FACW	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
<b>40 = Total Cover</b>				
<b>Herb Stratum (Plot size: <u>5ft</u> )</b>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Polystichum acrostichoides</u>	0	<input type="checkbox"/>	FACU	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
8. _____	0	<input type="checkbox"/>	_____	
9. _____	0	<input type="checkbox"/>	_____	
10. _____	0	<input type="checkbox"/>	_____	
11. _____	0	<input type="checkbox"/>	_____	
12. _____	0	<input type="checkbox"/>	_____	
<b>0 = Total Cover</b>				
<b>Woody Vine Stratum (Plot size: <u>30ft</u> )</b>				<b>Definitions of Vegetation Strata</b>  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.
1. _____	0	<input type="checkbox"/>	_____	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
<b>0 = Total Cover</b>				
<b>Hydrophytic Vegetation Present?</b>				Yes <input checked="" type="radio"/> No <input type="radio"/>
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.

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

[illegible]

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

### Hydric Soil Indicators:

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                                | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                         | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                            | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)              |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                        | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)                       | <input checked="" type="checkbox"/> Depleted Matrix (F3)                 |
| <input checked="" type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)                     | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Muck Mineral (S1)                      | <input type="checkbox"/> Redox Depressions (F8)                          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                     |  |
| <input type="checkbox"/> Sandy Redox (S5)                             |  |
| <input type="checkbox"/> Stripped Matrix (S6)                         |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B)         |  |

## 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)

<sup>3</sup>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.



**WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region**

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line      **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> Upland was taken southeast of the existing wetland.	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
<b>Remarks:</b> No wetland hydrology was present.			

Upland RLP-21ab  
**VEGETATION - Use scientific names of plant**

Sampling Point: upl-aeh-20200107-06

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <u>Ulmus rubra</u>	<u>5</u>	<input checked="" type="checkbox"/>	FAC	Number of Dominant Species That are OBL, FACW, or FAC:	<u>3</u> (A)
2. <u>Acer rubrum</u>	<u>5</u>	<input checked="" type="checkbox"/>	FAC	Total Number of Dominant Species Across All Strata:	<u>7</u> (B)
3. _____	<u>0</u>	<input type="checkbox"/>	_____	Percent of dominant Species That Are OBL, FACW, or FAC:	<u>42.9%</u> (A/B)
4. _____	<u>0</u>	<input type="checkbox"/>	_____		
5. _____	<u>0</u>	<input type="checkbox"/>	_____		
6. _____	<u>0</u>	<input type="checkbox"/>	_____		
7. _____	<u>0</u>	<input type="checkbox"/>	_____		
				<b>Prevalence Index worksheet:</b>	
Sapling/Shrub Stratum (Plot size: <u>15ft</u> )				Total % Cover of: Multiply by:	
1. <u>Rosa multiflora</u>	<u>25</u>	<input checked="" type="checkbox"/>	FACU	OBL species <u>0</u>	x 1 = <u>0</u>
2. <u>Acer rubrum</u>	<u>15</u>	<input checked="" type="checkbox"/>	FAC	FACW species <u>0</u>	x 2 = <u>0</u>
3. <u>Ulmus rubra</u>	<u>5</u>	<input type="checkbox"/>	FAC	FAC species <u>30</u>	x 3 = <u>90</u>
4. _____	<u>0</u>	<input type="checkbox"/>	_____	FACU species <u>65</u>	x 4 = <u>260</u>
5. _____	<u>0</u>	<input type="checkbox"/>	_____	UPL species <u>0</u>	x 5 = <u>0</u>
6. _____	<u>0</u>	<input type="checkbox"/>	_____	Column Totals: <u>95</u> (A)	<u>350</u> (B)
7. _____	<u>0</u>	<input type="checkbox"/>	_____	Prevalence Index = B/A = <u>3.684</u>	
				<b>Hydrophytic Vegetation Indicators:</b>	
Herb Stratum (Plot size: <u>5ft</u> )				<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
1. <u>Solidago canadensis</u>	<u>15</u>	<input checked="" type="checkbox"/>	FACU	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  <b>Definitions of Vegetation Strata</b>  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.	
2. <u>Glechoma hederacea</u>	<u>15</u>	<input checked="" type="checkbox"/>	FACU		
3. <u>Poa pratensis</u>	<u>10</u>	<input checked="" type="checkbox"/>	FACU		
4. _____	<u>0</u>	<input type="checkbox"/>	_____		
5. _____	<u>0</u>	<input type="checkbox"/>	_____		
6. _____	<u>0</u>	<input type="checkbox"/>	_____		
7. _____	<u>0</u>	<input type="checkbox"/>	_____		
8. _____	<u>0</u>	<input type="checkbox"/>	_____		
9. _____	<u>0</u>	<input type="checkbox"/>	_____		
10. _____	<u>0</u>	<input type="checkbox"/>	_____		
11. _____	<u>0</u>	<input type="checkbox"/>	_____		
12. _____	<u>0</u>	<input type="checkbox"/>	_____		
Woody Vine Stratum (Plot size: <u>30ft</u> )					
1. _____	<u>0</u>	<input type="checkbox"/>	_____	<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
2. _____	<u>0</u>	<input type="checkbox"/>	_____		
3. _____	<u>0</u>	<input type="checkbox"/>	_____		
4. _____	<u>0</u>	<input type="checkbox"/>	_____		
0 = Total Cover					
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.

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

[illegible]

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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 DETERMINATION DATA FORM - Northcentral and Northeast Region**

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line      **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> Upland was taken southeast of an existing wetland.	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
<b>Remarks:</b> No wetland hydrology was present.			

**VEGETATION - Use scientific names of plant**Sampling Point: upl-aeh-20200107-07

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <u>Prunus serotina</u>	45	<input checked="" type="checkbox"/>	FACU	Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)	
2. <u>Ulmus rubra</u>	10	<input type="checkbox"/>	FAC	Total Number of Dominant Species Across All Strata: <u>4</u> (B)	
3. _____	0	<input type="checkbox"/>	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)	
4. _____	0	<input type="checkbox"/>	_____		
5. _____	0	<input type="checkbox"/>	_____		
6. _____	0	<input type="checkbox"/>	_____		
7. _____	0	<input type="checkbox"/>	_____		
			55 = Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15ft</u> )					
1. <u>Ulmus rubra</u>	10	<input checked="" type="checkbox"/>	FAC	Total % Cover of: <u>0</u> x 1 = <u>0</u>	
2. <u>Acer rubrum</u>	10	<input checked="" type="checkbox"/>	FAC	FACW species <u>0</u> x 2 = <u>0</u>	
3. _____	0	<input type="checkbox"/>	_____	FAC species <u>30</u> x 3 = <u>90</u>	
4. _____	0	<input type="checkbox"/>	_____	FACU species <u>55</u> x 4 = <u>220</u>	
5. _____	0	<input type="checkbox"/>	_____	UPL species <u>0</u> x 5 = <u>0</u>	
6. _____	0	<input type="checkbox"/>	_____	Column Totals: <u>85</u> (A) <u>310</u> (B)	
7. _____	0	<input type="checkbox"/>	_____	Prevalence Index = B/A = <u>3.647</u>	
			20 = Total Cover		
Herb Stratum (Plot size: <u>5ft</u> )					
1. <u>Glechoma hederacea</u>	10	<input checked="" type="checkbox"/>	FACU	Hydrophytic Vegetation Indicators:	
2. _____	0	<input type="checkbox"/>	_____	<input type="checkbox"/> Rapid Test for Hydrophytic Vegetation	
3. _____	0	<input type="checkbox"/>	_____	<input type="checkbox"/> Dominance Test is > 50%	
4. _____	0	<input type="checkbox"/>	_____	<input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup>	
5. _____	0	<input type="checkbox"/>	_____	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)	
6. _____	0	<input type="checkbox"/>	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
7. _____	0	<input type="checkbox"/>	_____	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
8. _____	0	<input type="checkbox"/>	_____		
9. _____	0	<input type="checkbox"/>	_____	Definitions of Vegetation Strata	
10. _____	0	<input type="checkbox"/>	_____	Tree - Woody plants, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
11. _____	0	<input type="checkbox"/>	_____	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall.	
12. _____	0	<input type="checkbox"/>	_____	Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
			10 = Total Cover	Woody vine - All woody vines greater than 3.28 ft in height.	
Woody Vine Stratum (Plot size: <u>30ft</u> )					
1. _____	0	<input type="checkbox"/>	_____		
2. _____	0	<input type="checkbox"/>	_____		
3. _____	0	<input type="checkbox"/>	_____		
4. _____	0	<input type="checkbox"/>	_____		
			0 = Total Cover		
				Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	
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.

[illegible]



## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> Upland was taken west of wetland and stream complex on the hillside.	

**Hydrology**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: No wetland hydrology was present.			

**VEGETATION - Use scientific names of plant**Sampling Point: upl-aeh-20200107-08

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Carya ovata</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
2. _____	<u>0</u>	<input type="checkbox"/>	_____	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15ft</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>50</u> x 4 = <u>200</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>50</u> (A) <u>200</u> (B)  Prevalence Index = B/A = <u>4.000</u>
1. <u>Rosa multiflora</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. <u>Quercus alba</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Herb Stratum</b> (Plot size: <u>5ft</u> )				
1. <u>Schedonorus arundinaceus</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	<u>0</u>	<input type="checkbox"/>	_____	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
8. _____	<u>0</u>	<input type="checkbox"/>	_____	
9. _____	<u>0</u>	<input type="checkbox"/>	_____	
10. _____	<u>0</u>	<input type="checkbox"/>	_____	
11. _____	<u>0</u>	<input type="checkbox"/>	_____	
12. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Woody Vine Stratum</b> (Plot size: <u>30ft</u> )				
1. _____	<u>0</u>	<input type="checkbox"/>	_____	<b>Definitions of Vegetation Strata</b>  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.
2. _____	<u>0</u>	<input type="checkbox"/>	_____	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
<u>0</u> = Total Cover				<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<u>0</u> = Total Cover				
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.

[illegible]



## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> Upland was taken between two wetland complexes.	

**Hydrology**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: No wetland hydrology was present.			

**VEGETATION - Use scientific names of plant**Sampling Point: upl-aeh-20200107-09

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Populus deltoides</u>	<u>40</u>	<input checked="" type="checkbox"/>	FAC	Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)
2. <u>Prunus serotina</u>	<u>10</u>	<input type="checkbox"/>	FACU	
3. <u>Ulmus rubra</u>	<u>5</u>	<input type="checkbox"/>	FAC	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>55 = Total Cover</b>				<b>Prevalence Index worksheet:</b>  Total % Cover of:      Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>45</u> x 3 = <u>135</u> FACU species <u>45</u> x 4 = <u>180</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>90</u> (A) <u>315</u> (B)  Prevalence Index = B/A = <u>3.500</u>
<b>0 = Total Cover</b>				
<b>Sapling/Shrub Stratum (Plot size: <u>15ft</u> )</b>				
1. _____	<u>0</u>	<input type="checkbox"/>	_____	
2. _____	<u>0</u>	<input type="checkbox"/>	_____	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>0 = Total Cover</b>				
<b>Herb Stratum (Plot size: <u>5ft</u> )</b>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Solidago canadensis</u>	<u>15</u>	<input checked="" type="checkbox"/>	FACU	
2. <u>Rosa multiflora</u>	<u>15</u>	<input checked="" type="checkbox"/>	FACU	
3. <u>Plantago lanceolata</u>	<u>5</u>	<input type="checkbox"/>	FACU	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
8. _____	<u>0</u>	<input type="checkbox"/>	_____	
9. _____	<u>0</u>	<input type="checkbox"/>	_____	
10. _____	<u>0</u>	<input type="checkbox"/>	_____	
11. _____	<u>0</u>	<input type="checkbox"/>	_____	
12. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>35 = Total Cover</b>				
<b>Woody Vine Stratum (Plot size: <u>30ft</u> )</b>				<b>Definitions of Vegetation Strata</b>  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.
1. _____	<u>0</u>	<input type="checkbox"/>	_____	
2. _____	<u>0</u>	<input type="checkbox"/>	_____	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>0 = Total Cover</b>				
<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>				
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.

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

[illegible]

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 :

- ☐ 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)

<sup>3</sup>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:** Lincoln Park-Riverbend 138kV Transmission Line      **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> Upland was taken south of the wetland, adjacent to an existing parking pad.	

**Hydrology**

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ <b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
<b>Remarks:</b> No wetland hydrology was present.			

**VEGETATION - Use scientific names of plant**Sampling Point: upl-aeh-20200107-10

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	0	<input type="checkbox"/>	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
0 = Total Cover				<b>Prevalence Index worksheet:</b>  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
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  <b>Definitions of Vegetation Strata</b>  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.   <b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				<b>Remarks: (Include photo numbers here or on a separate sheet.)</b>  Vegetation was disturbed by seasonal conditions. Remanent plant materials allowed for positive identification of the species observed within the upland area.
0 = Total Cover				
0 = Total Cover				
0 = Total Cover				

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

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

[illegible]

<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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)

<sup>3</sup>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.



## WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

**Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line **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**

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> Upland was taken northeast of a wetland on a disturbed berm.	

**Hydrology**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: No hydrology indicators present.			

**VEGETATION - Use scientific names of plant**Sampling Point: upl-aeh-20200107-03

Tree Stratum (Plot size: <u>30ft</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	0	<input type="checkbox"/>	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>20.0%</u> (A/B)
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
0 = Total Cover				<b>Prevalence Index worksheet:</b> 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
<b>Sapling/Shrub Stratum (Plot size: <u>15ft</u> )</b>				
1. <i>Fagus grandifolia</i>	10	<input checked="" type="checkbox"/>	FACU	
2. <i>Malus pumila</i>	10	<input checked="" type="checkbox"/>	UPL	
3. <i>Populus deltoides</i>	5	<input checked="" type="checkbox"/>	FAC	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
25 = Total Cover				
<b>Herb Stratum (Plot size: <u>5ft</u> )</b>				
1. <i>Solidago canadensis</i>	20	<input checked="" type="checkbox"/>	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <i>Bromus inermis</i>	10	<input checked="" type="checkbox"/>	UPL	
3. <i>Oxalis corniculata</i>	5	<input type="checkbox"/>	FACU	
4. <i>Daucus carota</i>	5	<input type="checkbox"/>	UPL	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
8. _____	0	<input type="checkbox"/>	_____	
9. _____	0	<input type="checkbox"/>	_____	
10. _____	0	<input type="checkbox"/>	_____	
11. _____	0	<input type="checkbox"/>	_____	
12. _____	0	<input type="checkbox"/>	_____	
40 = Total Cover				
<b>Woody Vine Stratum (Plot size: <u>30ft</u> )</b>				
1. _____	0	<input type="checkbox"/>	_____	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.
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
0 = Total Cover				
<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>				
<b>Remarks: (Include photo numbers here or on a separate sheet.)</b> 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.

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

[illegible]

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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:** Lincoln Park-Riverbend 138kV Transmission Line  
**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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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 identification number for this sample point is W-200820-MRK-001 UPL.	

## Hydrology

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0		<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
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.	<i>Acer rubrum</i>	75	<input checked="" type="checkbox"/>	FAC
2.		0	<input type="checkbox"/>	
3.		0	<input type="checkbox"/>	
4.		0	<input type="checkbox"/>	
5.		0	<input type="checkbox"/>	
6.		0	<input type="checkbox"/>	
7.		0	<input type="checkbox"/>	
		75	= Total Cover	
Sapling/Shrub Stratum	(Plot size: 15' radius )	Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Acer rubrum</i>	25	<input checked="" type="checkbox"/>	FAC
2.	<i>Smilax rotundifolia</i>	20	<input checked="" type="checkbox"/>	FAC
3.	<i>Lindera benzoin</i>	10	<input type="checkbox"/>	FACW
4.		0	<input type="checkbox"/>	
5.		0	<input type="checkbox"/>	
6.		0	<input type="checkbox"/>	
7.		0	<input type="checkbox"/>	
		55	= Total Cover	
Herb Stratum	(Plot size: None )	Absolute % Cover	Dominant Species?	Indicator Status
1.		0	<input type="checkbox"/>	
2.		0	<input type="checkbox"/>	
3.		0	<input type="checkbox"/>	
4.		0	<input type="checkbox"/>	
5.		0	<input type="checkbox"/>	
6.		0	<input type="checkbox"/>	
7.		0	<input type="checkbox"/>	
8.		0	<input type="checkbox"/>	
9.		0	<input type="checkbox"/>	
10.		0	<input type="checkbox"/>	
11.		0	<input type="checkbox"/>	
12.		0	<input type="checkbox"/>	
		0	= Total Cover	
Woody Vine Stratum	(Plot size: None )	Absolute % Cover	Dominant Species?	Indicator Status
1.		0	<input type="checkbox"/>	
2.		0	<input type="checkbox"/>	
3.		0	<input type="checkbox"/>	
4.		0	<input type="checkbox"/>	
		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 <u>0</u>	x 1 = <u>0</u>
FACW species <u>10</u>	x 2 = <u>20</u>
FAC species <u>120</u>	x 3 = <u>360</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>130</u> (A)	<u>380</u> (B)
Prevalence Index = B/A = <u>2.923</u>	

**Hydrophytic Vegetation Indicators:**

☐ Rapid Test for Hydrophytic Vegetation

☒ Dominance Test is > 50%

☒ Prevalence Index is ≤ 3.0 <sup>1</sup>

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

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> 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.)

[illegible]

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 :

- ☐ 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)

<sup>3</sup>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:** Lincoln Park-Riverbend 138kV Transmission Line  
**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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0		<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
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. <i>Acer saccharum</i>	25	<input checked="" type="checkbox"/>	FACU	<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)
2. _____	0	<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
7. _____	0	<input type="checkbox"/>		
<b>Sapling/Shrub Stratum (Plot size: _____ )</b>		25 = Total Cover		<b>Prevalence Index worksheet:</b> Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>15</u> x 2 = <u>30</u> FAC species <u>15</u> x 3 = <u>45</u> FACU species <u>90</u> x 4 = <u>360</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>120</u> (A) <u>435</u> (B)  Prevalence Index = B/A = <u>3.625</u>
1. _____	0	<input type="checkbox"/>		
2. _____	0	<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
<b>Herb Stratum (Plot size: 5ft radius )</b>		0 = Total Cover		<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <i>Dactylis glomerata</i>	65	<input checked="" type="checkbox"/>	FACU	
2. <i>Verbesina alternifolia</i>	15	<input type="checkbox"/>	FACW	
3. <i>Solidago rugosa</i>	10	<input type="checkbox"/>	FAC	
4. <i>Persicaria virginiana</i>	5	<input type="checkbox"/>	FAC	
5. _____	0	<input type="checkbox"/>		
6. _____	0	<input type="checkbox"/>		
7. _____	0	<input type="checkbox"/>		
8. _____	0	<input type="checkbox"/>		
9. _____	0	<input type="checkbox"/>		
10. _____	0	<input type="checkbox"/>		
11. _____	0	<input type="checkbox"/>		
<b>Woody Vine Stratum (Plot size: _____ )</b>		95 = Total Cover		<b>Definitions of Vegetation Strata:</b>  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.
1. _____	0	<input type="checkbox"/>		
2. _____	0	<input type="checkbox"/>		
3. _____	0	<input type="checkbox"/>		
4. _____	0	<input type="checkbox"/>		
		0 = Total Cover		<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>

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

[illegible]



**WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region****Project/Site:** Lincoln Park-Riverbend 138kV Transmission Line**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.**

<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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 identification number associated with this sample point is W-2020-10-06-BJM-002/003.	

**Hydrology**

<b>Wetland Hydrology Indicators:</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<b>Primary Indicators (minimum of one required; check all that apply)</b>			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	0
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches):	0
<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A			
<b>Remarks:</b> 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: <u>30 ft radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Platanus occidentalis</u>	20	<input checked="" type="checkbox"/>	FACW	Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>8</u> (B)  Percent of dominant Species That Are OBL, FACW, or FAC: <u>25.0%</u> (A/B)
2. <u>Prunus serotina</u>	20	<input checked="" type="checkbox"/>	FACU	
3. <u>Acer saccharum</u>	15	<input checked="" type="checkbox"/>	FACU	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
<b>55 = Total Cover</b>				<b>Prevalence Index worksheet:</b> Total % Cover of: Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species <u>75</u> x 4 = <u>300</u> UPL species <u>0</u> x 5 = <u>0</u> <b>Column Totals:</b> <u>100</u> (A) <u>355</u> (B) Prevalence Index = B/A = <u>3.550</u>
<b>Sapling/Shrub Stratum (Plot size: <u>15ft radius</u> )</b>				
1. <u>Acer saccharum</u>	15	<input checked="" type="checkbox"/>	FACU	
2. <u>Robinia pseudoacacia</u>	10	<input checked="" type="checkbox"/>	FACU	
3. <u>Prunus serotina</u>	5	<input type="checkbox"/>	FACU	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
<b>30 = Total Cover</b>				
<b>Herb Stratum (Plot size: <u>5ft radius</u> )</b>				
1. <u>Poa pratensis</u>	5	<input checked="" type="checkbox"/>	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <sup>1</sup> <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Agrimonia striata</u>	5	<input checked="" type="checkbox"/>	FACU	
3. <u>Persicaria virginiana</u>	5	<input checked="" type="checkbox"/>	FAC	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
8. _____	0	<input type="checkbox"/>	_____	
9. _____	0	<input type="checkbox"/>	_____	
10. _____	0	<input type="checkbox"/>	_____	
11. _____	0	<input type="checkbox"/>	_____	
12. _____	0	<input type="checkbox"/>	_____	
<b>15 = Total Cover</b>				
<b>Woody Vine Stratum (Plot size: _____ )</b>				
1. _____	0	<input type="checkbox"/>	_____	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.
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
<b>0 = Total Cover</b>				<b>Hydrophytic Vegetation Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>

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.)

[illegible]

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>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 :

- ☐ 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)

<sup>3</sup>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:** Lincoln Park-Riverbend 138kV Transmission Line  
**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 <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
<b>Remarks: (Explain alternative procedures here or in a separate report.)</b> 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

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one required; check all that apply)</b>		<b>Secondary Indicators (minimum of 2 required)</b>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)	
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0		<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
<b>Remarks:</b> No sources of hydrology were observed.			

# VEGETATION - Use scientific names of plants

Sampling Point: Wetland RLP-32 UPL

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	0	<input type="checkbox"/>	_____	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
0 = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	0	<input type="checkbox"/>	_____	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
5. _____	0	<input type="checkbox"/>	_____	
6. _____	0	<input type="checkbox"/>	_____	
7. _____	0	<input type="checkbox"/>	_____	
0 = Total Cover				
Herb Stratum (Plot size: 5ft radius _____)				
1. <i>Dactylis glomerata</i>	35	<input checked="" type="checkbox"/>	FACU	
2. <i>Poa pratensis</i>	25	<input checked="" type="checkbox"/>	FACU	
3. <i>Taraxacum officinale</i>	15	<input type="checkbox"/>	FACU	
4. <i>Plantago major</i>	10	<input type="checkbox"/>	FACU	
5. <i>Galium aparine</i>	10	<input type="checkbox"/>	FACU	
6. <i>Trifolium pratense</i>	10	<input type="checkbox"/>	FACU	
7. <i>Geum canadense</i>	5	<input type="checkbox"/>	FAC	
8. _____	0	<input type="checkbox"/>	_____	
9. _____	0	<input type="checkbox"/>	_____	
10. _____	0	<input type="checkbox"/>	_____	
11. _____	0	<input type="checkbox"/>	_____	
12. _____	0	<input type="checkbox"/>	_____	
110 = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	0	<input type="checkbox"/>	_____	
2. _____	0	<input type="checkbox"/>	_____	
3. _____	0	<input type="checkbox"/>	_____	
4. _____	0	<input type="checkbox"/>	_____	
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 <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>5</u>	x 3 = <u>15</u>
FACU species <u>105</u>	x 4 = <u>420</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>110</u> (A)	<u>435</u> (B)
Prevalence Index = B/A = <u>3.955</u>	

**Hydrophytic Vegetation Indicators:**

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☐ Prevalence Index is ≤3.0 <sup>1</sup>

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

☐ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)

<sup>1</sup> 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.)

[illegible]

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

### Hydric Soil Indicators:

- |   |  |
|---|--|
| <input type="checkbox"/> Histosol (A1)                        | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                 | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                    | <input type="checkbox"/> Loamy Mucky Mineral (F1) LRR K, L)              |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)               | <input checked="" type="checkbox"/> Depleted Matrix (F3)                 |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)    | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)             | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Muck Mineral (S1)              | <input type="checkbox"/> Redox Depressions (F8)                          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)             |  |
| <input type="checkbox"/> Sandy Redox (S5)                     |  |
| <input type="checkbox"/> Stripped Matrix (S6)                 |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) |  |

Indicators for Problematic Hydric Soils : <sup>3</sup>

- ☐ 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)

<sup>3</sup>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 sample point 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.



**APPENDIX B**  
**OEPA WETLAND ORAM FORMS**

<b>Version 5.0</b>	<b>Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization</b>	
	<b>Background Information</b> <b>Scoring Boundary Worksheet</b> <b>Narrative Rating</b> <b>Field Form Quantitative Rating</b> <b>ORAM Summary Worksheet</b> <b>Wetland Categorization Worksheet</b>	Ohio EPA, Division of Surface Water Final: February 1, 2001

### **Instructions**

The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland *may* be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at: <http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx>

## Background Information

<b>Name:</b> LINCOLN PARK-RIVERBEND 138 kV TRANSMISSION LINE PROJECT	
<b>Date:</b> January 6-8, August 20, October 06, and November 3, 2020	
<b>Affiliation:</b> AECOM Technical Services, Incorporated	
<b>Address:</b> 525 Vine Street, Suite 1800, Cincinnati, OH 45202	
<b>Phone Number:</b> 1-513-419-3450	
<b>e-mail address:</b> jake.lubbers@aecom.com	
<b>Name of Wetland:</b> 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	
<b>Vegetation Community(ies):</b> PEM/PSS/PFO (see Table 2 for complete designations)	
<b>HGM Class(es):</b> Depressional	
<b>Location of Wetland:</b> 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 6th to 8th, August 20th, October 6th, and November 3rd, 2020
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



<b>Name of Wetland:</b> 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	
<b>Wetland Size (acres, hectares):</b>	See Table 2
<b>Sketch:</b> Include north arrow, relationship with other surface waters, vegetation zones, etc.	
<p>See Figure 1, 2, and 3 of Wetland Delineation and Stream Assessment Report</p>	
<b>Comments, Narrative Discussion, Justification of Category Changes:</b>	
<p>See Appendix A: USACE Wetland Delineation Data Forms for Description of Wetlands</p>	
<b>Final score :</b>	<b>Category:</b>

## 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
<b>Step 1</b>	Identify the wetland area of interest. This may be the site of a proposed impact, a mitigation site, conservation site, etc.	X	
<b>Step 2</b>	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	
<b>Step 3</b>	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	
<b>Step 4</b>	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	
<b>Step 5</b>	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		X
<b>Step 6</b>	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

## 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	<b>Critical Habitat.</b> 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	<b>NO</b>  Go to Question 2
2	<b>Threatened or Endangered Species.</b> 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	<b>NO</b>  Go to Question 3
3	<b>Documented High Quality Wetland.</b> 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	<b>NO</b>  Go to Question 4
4	<b>Significant Breeding or Concentration Area.</b> 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	<b>NO</b>  Go to Question 5
5	<b>Category 1 Wetlands.</b> Is the wetland less than 0.5 hectares (1 acre) in size and <b>hydrologically isolated</b> and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , 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	<b>NO</b>  Go to Question 6
6	<b>Bogs.</b> Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> 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	<b>NO</b>  Go to Question 7
7	<b>Fens.</b> 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	<b>NO</b>  Go to Question 8a



#	Question	Circle one	
8a	<b>"Old Growth Forest."</b> 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	<b>NO</b>  Go to Question 8b
8b	<b>Mature forested wetlands.</b> 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	<b>NO</b>  Go to Question 9a
9a	<b>Lake Erie coastal and tributary wetlands.</b> 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	<b>NO</b>  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	<b>NO</b>  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	<b>NO</b>  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	<b>NO</b>  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	<b>NO</b>  Go to Question 10
10	<b>Lake Plain Sand Prairies (Oak Openings)</b> 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 graminaceous 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	<b>NO</b>  Go to Question 11
11	<b>Relict Wet Prairies.</b> 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	<b>NO</b>  Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	Oak Opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinarum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

End of Narrative Rating. Begin Quantitative Rating on next page.

# Wetland RLP-01

Site: FE Lincoln Park-Riverbend

Rater(s): Audrey Hanner

Date:

1/8/2020

Field Id:

w-aeh-20200108-01

1	1
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max 6 pts

subtotal

## Metric 1. Wetland Area (size).

Select one size class and assign score.

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

0.17 acres

1	2
---	---

max 14 pts.

subtotal

## Metric 2. Upland buffers and surrounding land use.

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

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

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

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

5.0	7.0
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max 30 pts.

subtotal

## Metric 3. Hydrology.

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> ditch            | <input checked="" type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile                        | <input checked="" type="checkbox"/> filling/grading              |
| <input type="checkbox"/> dike                        | <input checked="" type="checkbox"/> road bed/RR track            |
| <input type="checkbox"/> weir                        | <input checked="" type="checkbox"/> dredging                     |
| <input checked="" type="checkbox"/> stormwater input | <input type="checkbox"/> Other:                                  |

4	11
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max 20 pts.

subtotal

## Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

- |   |   |
|---|---|
| <input type="checkbox"/> mowing                       | <input checked="" type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing                      | <input type="checkbox"/> herbaceous/aquatic bed removal   |
| <input checked="" type="checkbox"/> clearcutting      | <input checked="" type="checkbox"/> sedimentation         |
| <input checked="" type="checkbox"/> selective cutting | <input checked="" type="checkbox"/> dredging              |
| <input type="checkbox"/> woody debris removal         | <input type="checkbox"/> farming                          |
| <input checked="" type="checkbox"/> toxic pollutants  | <input type="checkbox"/> nutrient enrichment              |

11
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subtotal this page ORAM v. 5.0 Field Form Quantitative Rating



# Wetland RLP-01

Site: FE Lincoln Park-Riverbend

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 Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

-4

7

max 20pts.

subtotal

## Metric 6. Plant communities, interspersions, microtopography.

### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

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

### 6b. horizontal (plan view) Interspersion.

Select only one.

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

### 6c. Coverage of invasive plants. Refer

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

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

### 6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ 0 Vegetated hummocks/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 generally w/o presence of rare threatened or endangered spp to

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

### Mudflat and Open Water Class Quality

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

### Microtopography Cover Scale

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

Category 1

7

GRAND TOTAL(max 100 pts)

# ORAM Summary Worksheet

Wetland RLP-01

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input checked="" type="radio"/> NO	If yes, Category 1.
	Question 6. Bogs	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 7. Fens	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES <input checked="" type="radio"/> NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input checked="" type="radio"/> NO	If yes, Category 3
Question 11. Relict Wet Prairies	YES <input checked="" type="radio"/> 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, interspersed, microtopography	-4	
	TOTAL SCORE Consult most recent score calibration report at <a href="http://www.epa.ohio.gov/dsw/401/index.aspx">http://www.epa.ohio.gov/dsw/401/index.aspx</a> to determine the wetland's category based on its quantitative score	7	Category based on score breakpoints  Category 1

Complete 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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?	<input checked="" type="radio"/> YES  Wetland is assigned to the appropriate category based on the scoring range	<input type="radio"/> 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	<input checked="" type="radio"/> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> Category 1	<input type="radio"/> Category 2	<input type="radio"/> Category 3

**End of Ohio Rapid Assessment Method for Wetlands.**



## Wetland RLP-02

Site: FE Lincoln Park-Riverbend

Rater(s): J. Lubbers; J. Tucker

Date:

1/6/2020

Field Id:

w-jbl-20200106-01

0 0

max 6 pts

subtotal

### Metric 1. Wetland Area (size).

Select one size class and assign score.

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

0.07 acres

8 8

max 14 pts.

subtotal

### Metric 2. Upland buffers and surrounding land use.

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

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

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

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

12.0 20.0

max 30 pts.

subtotal

### Metric 3. Hydrology.

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

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

12 32

max 20 pts.

subtotal

### Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

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

32

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating

## Wetland RLP-02

Site: FE Lincoln Park-Riverbend

Rater(s): J. Lubbers; J. Tucker

Date:

1/6/2020

Field Id:

w-jbl-20200106-01

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 Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

6

38

max 20pts.

subtotal

### Metric 6. Plant communities, interspersions, 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 hummocks/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 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
- 2 Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
- 3 Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

#### Narrative Description of Vegetation Quality

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

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

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

#### Mudflat and Open Water Class Quality

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

#### Microtopography Cover Scale

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

Category 2

38 GRAND TOTAL(max 100 pts)

# ORAM Summary Worksheet

Wetland RLP-02

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input checked="" type="radio"/> NO	If yes, Category 1.
	Question 6. Bogs	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 7. Fens	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES <input checked="" type="radio"/> NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input checked="" type="radio"/> NO	If yes, Category 3
Question 11. Relict Wet Prairies	YES <input checked="" type="radio"/> 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, interspersed, microtopography	6	
	TOTAL SCORE Consult most recent score calibration report at <a href="http://www.epa.ohio.gov/dsw/401/index.aspx">http://www.epa.ohio.gov/dsw/401/index.aspx</a> to determine the wetland's category based on its quantitative score	38	Category based on score breakpoints  Category 2

## Complete 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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?	<input checked="" type="radio"/> YES  Wetland is assigned to the appropriate category based on the scoring range	<input type="radio"/> 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	<input checked="" type="radio"/> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<input checked="" type="radio"/> 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
		<input checked="" type="radio"/>	

**End of Ohio Rapid Assessment Method for Wetlands.**

<b>Wetland ID:</b>	<b>Wetland RLP-03</b>
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<b>Site:</b>	FE Lincoln Park-Riverbend	<b>Rater(s):</b>	J. Lubbers; J. Tucker; B. Miller	<b>Date:</b>	1/7 and 10/6/2020
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<b>2.0</b>	<b>2.0</b>
max 6 pts	subtotal

### Metric 1. Wetland Area (size).

- Select one size class and assign score.
- ☐ >50 acres (>20.2ha) (6 pts)
  - ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
  - ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
  - ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
  - ☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
  - ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
  - ☐ <0.1 acres (0.04ha) (0 pts)

### Field ID:

W-JBL-20200107-02

Delineated acres:	1.35
Total acres:	2.00

<b>5.0</b>	<b>7.0</b>
max 14 pts.	subtotal

### Metric 2. Upland buffers and surrounding land use.

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

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

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

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

<b>9.0</b>	<b>16.0</b>
max 30 pts.	subtotal

### Metric 3. Hydrology.

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- |   |   |
|---|---|
| <input type="checkbox"/> ditch            | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile             | <input checked="" type="checkbox"/> filling/grading   |
| <input type="checkbox"/> dike             | <input checked="" type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir             | <input type="checkbox"/> dredging                     |
| <input type="checkbox"/> stormwater input | <input type="checkbox"/> Other:                       |

<b>7.0</b>	<b>23.0</b>
max 20 pts.	subtotal

### Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

- |  |   |
|--|---|
| <input type="checkbox"/> mowing                      | <input checked="" type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing                     | <input type="checkbox"/> herbaceous/aquatic bed removal   |
| <input checked="" type="checkbox"/> clearcutting     | <input checked="" type="checkbox"/> sedimentation         |
| <input type="checkbox"/> selective cutting           | <input type="checkbox"/> dredging                         |
| <input type="checkbox"/> woody debris removal        | <input type="checkbox"/> farming                          |
| <input checked="" type="checkbox"/> toxic pollutants | <input type="checkbox"/> nutrient enrichment              |

<b>23.0</b>
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

<b>Wetland ID:</b>	<b>Wetland RLP-03</b>
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<b>Site:</b>	FE Lincoln Park-Riverbend	<b>Rater(s):</b>	J. Lubbers; J. Tucker; B. Miller	<b>Date:</b>	1/7 and 10/6/2020
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<b>23.0</b>
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subtotal this page

**Field ID:**

**W-JBL-20200107-02**

<b>0.0</b>	<b>23.0</b>
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max 10 pts.

subtotal

### Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

<b>4.0</b>	<b>27.0</b>
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max 20pts.

subtotal

### Metric 6. Plant communities, interspersions, 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) interspersions.

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 hummocks/tussocks
- ☒ 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, moderate although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to

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

#### Mudflat and Open Water Class Quality

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

#### Microtopography Cover Scale

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

<b>27.0</b>	<b>TOTAL (Max 100 pts)</b>
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<b>1</b>	<b>Category</b>
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<b>Wetland ID:</b>	<b>Wetland RLP-03</b>
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### ORAM Summary Worksheet

		<b>Circle answer or insert score</b>	<b>Result</b>
Narrative Rating	Question 1. Critical Habitat	YES <b>*NO</b>	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <b>*NO</b>	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <b>*NO</b>	If yes, Category 3.
	Question 4. Significant bird habitat	YES <b>*NO</b>	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <b>*NO</b>	If yes, Category 1.
	Question 6. Bogs	YES <b>*NO</b>	If yes, Category 3.
	Question 7. Fens	YES <b>*NO</b>	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <b>*NO</b>	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES <b>*NO</b>	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <b>*NO</b>	If yes, Category 3
	Question 11. Relict Wet Prairies	YES <b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	<b>2</b>	
	Metric 2. Buffers and surrounding land use	<b>5</b>	
	Metric 3. Hydrology	<b>9</b>	
	Metric 4. Habitat	<b>7</b>	
	Metric 5. Special Wetland Communities	<b>0</b>	
	Metric 6. Plant communities, interspersions, microtopography	<b>4</b>	
	TOTAL SCORE	<b>27</b>	Category based on score breakpoints

**Complete Wetland Categorization Worksheet.**

<b>Wetland ID:</b>	<b>Wetland RLP-03</b>
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## 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	<b>*NO</b>	Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<b>*NO</b>	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	<b>*NO</b>	Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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?	<b>*YES</b> 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	<b>*NO</b>	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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<b>*NO</b> 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	<b>*Category 1</b>	Category 2	Category 3	
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**End of Ohio Rapid Assessment Method for Wetlands.**

## Wetland RLP-04

Site: FFE Lincoln Park-Riverbend

Rater(s): J. Lubbers; J. Tucker

Date:

1/7/2020

Field Id:

w-jbl-20200107-01

0 0

max 6 pts.

subtotal

### Metric 1. Wetland Area (size).

Select one size class and assign score.

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

0.04 acres

4 4

max 14 pts.

subtotal

### Metric 2. Upland buffers and surrounding land use.

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

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

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

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

10.0 14.0

max 30 pts.

subtotal

### Metric 3. Hydrology.

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> ditch | <input type="checkbox"/> point source (nonstormwater) |
| <input checked="" type="checkbox"/> tile  | <input checked="" type="checkbox"/> filling/grading   |
| <input type="checkbox"/> dike             | <input type="checkbox"/> road bed/RR track            |
| <input type="checkbox"/> weir             | <input type="checkbox"/> dredging                     |
| <input type="checkbox"/> stormwater input | <input type="checkbox"/> Other: garbage dumping       |

5 19

max 20 pts.

subtotal

### Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> mowing    | <input type="checkbox"/> shrub/sapling removal          |
| <input type="checkbox"/> grazing              | <input type="checkbox"/> herbaceous/aquatic bed removal |
| <input type="checkbox"/> clearcutting         | <input checked="" type="checkbox"/> sedimentation       |
| <input type="checkbox"/> selective cutting    | <input type="checkbox"/> dredging                       |
| <input type="checkbox"/> woody debris removal | <input type="checkbox"/> farming                        |
| <input type="checkbox"/> toxic pollutants     | <input type="checkbox"/> nutrient enrichment            |

19

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating



# Wetland RLP-04

Site: FFE Lincoln Park-Riverbend

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 Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

2

21

max 20pts.

subtotal

## Metric 6. Plant communities, interspersions, microtopography.

### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

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

### 6b. horizontal (plan view) Interspersions.

Select only one.

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

### 6c. Coverage of invasive plants. Refer

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

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

### 6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ 0 Vegetated hummocks/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 generally w/o presence of rare threatened or endangered spp to

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

### Mudflat and Open Water Class Quality

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

### Microtopography Cover Scale

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

Category 1

21

GRAND TOTAL(max 100 pts)

# ORAM Summary Worksheet

Wetland RLP-04

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input checked="" type="radio"/> NO	If yes, Category 1.
	Question 6. Bogs	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 7. Fens	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES <input checked="" type="radio"/> NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input checked="" type="radio"/> NO	If yes, Category 3
Question 11. Relict Wet Prairies	YES <input checked="" type="radio"/> 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, interspersed, microtopography	2	
	TOTAL SCORE Consult most recent score calibration report at <a href="http://www.epa.ohio.gov/dsw/401/index.aspx">http://www.epa.ohio.gov/dsw/401/index.aspx</a> to determine the wetland's category based on its quantitative score	21	Category based on score breakpoints  Category 1

Complete 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	<input checked="" type="radio"/> NO	Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> NO	Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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?	<input checked="" type="radio"/> YES  Wetland is assigned to the appropriate category based on the scoring range	<input type="radio"/> 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	<input checked="" type="radio"/> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<input checked="" type="radio"/> 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
	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

**End of Ohio Rapid Assessment Method for Wetlands.**



# Wetland RLP-05

Site: FFE Lincoln Park-Riverbend

Rater(s): J. Lubbers; J. Tucker

Date:

1/7/2020

Field Id:

w-jbl-20200107-03

1 1

max 6 pts

subtotal

## Metric 1. Wetland Area (size).

Select one size class and assign score.

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

0.14 acres  
extends outside SC

5 6

max 14 pts.

subtotal

## Metric 2. Upland buffers and surrounding land use.

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

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

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

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

10.5 16.5

max 30 pts.

subtotal

## Metric 3. Hydrology.

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

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

8 24.5

max 20 pts.

subtotal

## Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

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

24.5

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating

# Wetland RLP-05

Site:FFE Lincoln Park-Riverbend

Rater(s): J. Lubbers; J. Tucker

Date:

1/7/2020

24.5

subtotal this page

0 24.5

max 10 pts.

subtotal

## Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

0 24.5

max 20pts.

subtotal

## Metric 6. Plant communities, interspersions, microtopography.

### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

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

### 6b. horizontal (plan view) Interspersions.

Select only one.

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

### 6c. Coverage of invasive plants. Refer

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

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

### 6d. Microtopography.

Score all present using 0 to 3 scale.

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

Field Id:

w-jbl-20200107-03

### Vegetation Community Cover Scale

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

### Narrative Description of Vegetation Quality

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

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

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

### Mudflat and Open Water Class Quality

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

### Microtopography Cover Scale

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

Category 1

24.5 GRAND TOTAL(max 100 pts)

# ORAM Summary Worksheet

Wetland RLP-05

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input checked="" type="radio"/> NO	If yes, Category 1.
	Question 6. Bogs	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 7. Fens	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES <input checked="" type="radio"/> NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input checked="" type="radio"/> NO	If yes, Category 3
Question 11. Relict Wet Prairies	YES <input checked="" type="radio"/> 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, interspersed, microtopography	0	
	TOTAL SCORE Consult most recent score calibration report at <a href="http://www.epa.ohio.gov/dsw/401/index.aspx">http://www.epa.ohio.gov/dsw/401/index.aspx</a> to determine the wetland's category based on its quantitative score	24.5	Category based on score breakpoints  Category 1

## Complete 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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?	<input checked="" type="radio"/> YES  Wetland is assigned to the appropriate category based on the scoring range	<input type="radio"/> 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	<input checked="" type="radio"/> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<input checked="" type="radio"/> 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
	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

**End of Ohio Rapid Assessment Method for Wetlands.**

## Wetland RLP-06

Site: FFE Lincoln Park-Riverbend

Rater(s): J. Lubbers; J. Tucker

Date:

1/7/2020

**0** **0**

max 6 pts

subtotal

### Metric 1. Wetland Area (size).

Select one size class and assign score.

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

Field Id:

w-jbl-20200107-04

0.03 acres

**5** **5**

max 14 pts.

subtotal

### Metric 2. Upland buffers and surrounding land use.

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

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

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

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

**9.0** **14.0**

max 30 pts.

subtotal

### Metric 3. Hydrology.

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> ditch            | <input type="checkbox"/> point source (nonstormwater)      |
| <input type="checkbox"/> tile                        | <input checked="" type="checkbox"/> filling/grading        |
| <input type="checkbox"/> dike                        | <input checked="" type="checkbox"/> road bed/RR track      |
| <input type="checkbox"/> weir                        | <input type="checkbox"/> dredging                          |
| <input checked="" type="checkbox"/> stormwater input | <input checked="" type="checkbox"/> Other: garbage dumping |

**9** **23**

max 20 pts.

subtotal

### Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

- |   |   |
|---|---|
| <input type="checkbox"/> mowing                       | <input checked="" type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing                      | <input type="checkbox"/> herbaceous/aquatic bed removal   |
| <input type="checkbox"/> clearcutting                 | <input checked="" type="checkbox"/> sedimentation         |
| <input checked="" type="checkbox"/> selective cutting | <input type="checkbox"/> dredging                         |
| <input type="checkbox"/> woody debris removal         | <input type="checkbox"/> farming                          |
| <input type="checkbox"/> toxic pollutants             | <input type="checkbox"/> nutrient enrichment              |

**23**

subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

# Wetland RLP-06

Site: FFE Lincoln Park-Riverbend

Rater(s): J. Lubbers; J. Tucker

Date:

1/7/2020

Field Id:

w-jbl-20200107-04

23

subtotal this page

0 23

max 10 pts.

subtotal

## Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

3 26

max 20pts.

subtotal

## Metric 6. Plant communities, interspersions, 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)
- ☐ Low (1)
- ☐ None (0)

### 6c. Coverage of invasive plants. Refer

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

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

### 6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ 1 Vegetated hummocks/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 generally w/o presence of rare threatened or endangered spp to

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

### Mudflat and Open Water Class Quality

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

### Microtopography Cover Scale

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

Category 1

26 GRAND TOTAL(max 100 pts)



# ORAM Summary Worksheet

Wetland RLP-06

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input checked="" type="radio"/> NO	If yes, Category 1.
	Question 6. Bogs	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 7. Fens	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES <input checked="" type="radio"/> NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input checked="" type="radio"/> NO	If yes, Category 3
Question 11. Relict Wet Prairies	YES <input checked="" type="radio"/> 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, interspersed, microtopography	3	
	TOTAL SCORE Consult most recent score calibration report at <a href="http://www.epa.ohio.gov/dsw/401/index.aspx">http://www.epa.ohio.gov/dsw/401/index.aspx</a> to determine the wetland's category based on its quantitative score	26	Category based on score breakpoints  Category 1

## Complete 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	<input checked="" type="radio"/> NO	Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> NO	Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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?	<input checked="" type="radio"/> YES  Wetland is assigned to the appropriate category based on the scoring range	<input type="radio"/> 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	<input checked="" type="radio"/> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<input checked="" type="radio"/> 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
	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

**End of Ohio Rapid Assessment Method for Wetlands.**

## Wetland RLP-07

Site: FFE Lincoln Park-Riverbend

Rater(s): J. Lubbers; J. Tucker

Date:

1/7/2020

**2** **2**

max 6 pts

subtotal

### Metric 1. Wetland Area (size).

Select one size class and assign score.

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

Field Id:

w-jbl-20200107-05

 acres  
extends outside SC**11** **13**

max 14 pts.

subtotal

### Metric 2. Upland buffers and surrounding land use.

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

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

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

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

**8.0** **21.0**

max 30 pts.

subtotal

### Metric 3. Hydrology.

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- |   |  |
|---|--|
| <input type="checkbox"/> ditch            | <input type="checkbox"/> point source (nonstormwater)      |
| <input type="checkbox"/> tile             | <input checked="" type="checkbox"/> filling/grading        |
| <input type="checkbox"/> dike             | <input checked="" type="checkbox"/> road bed/RR track      |
| <input type="checkbox"/> weir             | <input type="checkbox"/> dredging                          |
| <input type="checkbox"/> stormwater input | <input checked="" type="checkbox"/> Other: garbage dumping |

**8** **29**

max 20 pts.

subtotal

### Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

- |  |   |
|--|---|
| <input type="checkbox"/> mowing                  | <input checked="" type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing                 | <input type="checkbox"/> herbaceous/aquatic bed removal   |
| <input checked="" type="checkbox"/> clearcutting | <input checked="" type="checkbox"/> sedimentation         |
| <input type="checkbox"/> selective cutting       | <input type="checkbox"/> dredging                         |
| <input type="checkbox"/> woody debris removal    | <input checked="" type="checkbox"/> farming               |
| <input type="checkbox"/> toxic pollutants        | <input checked="" type="checkbox"/> nutrient enrichment   |

**29**

subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating



# Wetland RLP-07

Site: FFE Lincoln Park-Riverbend

Rater(s): J. Lubbers; J. Tucker

Date:

1/7/2020

Field Id:

w-jbl-20200107-05

29

subtotal this page

0 29

max 10 pts.

subtotal

## Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

2 31

max 20pts.

subtotal

## Metric 6. Plant communities, interspersions, 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)
- ☒ Low (1)
- ☐ None (0)

### 6c. Coverage of invasive plants. Refer

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

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

### 6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ 1 Vegetated hummocks/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 generally w/o presence of rare threatened or endangered spp to

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

### Mudflat and Open Water Class Quality

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

### Microtopography Cover Scale

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

Category 2

31 GRAND TOTAL(max 100 pts)

# ORAM Summary Worksheet

Wetland RLP-07

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input checked="" type="radio"/> NO	If yes, Category 1.
	Question 6. Bogs	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 7. Fens	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES <input checked="" type="radio"/> NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input checked="" type="radio"/> NO	If yes, Category 3
Question 11. Relict Wet Prairies	YES <input checked="" type="radio"/> 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, interspersed, microtopography	2	
	TOTAL SCORE Consult most recent score calibration report at <a href="http://www.epa.ohio.gov/dsw/401/index.aspx">http://www.epa.ohio.gov/dsw/401/index.aspx</a> to determine the wetland's category based on its quantitative score	31	Category based on score breakpoints  Category 2

Complete 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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	<input checked="" type="radio"/> 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 within the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	<input checked="" type="radio"/> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<input checked="" type="radio"/> 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
		<input checked="" type="radio"/>	

End of Ohio Rapid Assessment Method for Wetlands.



## Wetland RLP-08ab

Site: FE Lincoln Park-Riverbend

Rater(s): JTT, JBL

Date:

1/7/2020

2 2

## Metric 1. Wetland Area (size).

Field Id:

w-jbl-20200107-06ab

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)  
☐ <0.1 acres (0.04ha) (0 pts)

0.35 acres  
 extends outside SC

11 13

## 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)  
☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  
☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

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

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

11.0 24.0

## Metric 3. Hydrology.

max 30 pts.

subtotal

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

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

8 32

## Metric 4. Habitat Alteration and Development.

max 20 pts.

subtotal

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

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

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

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

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

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

Check all disturbances observed

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

32

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating

# Wetland RLP-08ab

Site: FE Lincoln Park-Riverbend

Rater(s): JTT, JBL

Date:

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 Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

4

36

max 20pts.

subtotal

## Metric 6. Plant communities, interspersions, microtopography.

### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

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

### 6b. horizontal (plan view) Interspersions.

Select only one.

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

### 6c. Coverage of invasive plants. Refer

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

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

### 6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ 0 Vegetated hummocks/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 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality |
| 2 | Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality |
| 3 | Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality   |

### Narrative Description of Vegetation Quality

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

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

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

### Mudflat and Open Water Class Quality

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

### Microtopography Cover Scale

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

Category 2

36

GRAND TOTAL(max 100 pts)

# ORAM Summary Worksheet

Wetland RLP-08ab

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input checked="" type="radio"/> NO	If yes, Category 1.
	Question 6. Bogs	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 7. Fens	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES <input checked="" type="radio"/> NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input checked="" type="radio"/> NO	If yes, Category 3
Question 11. Relict Wet Prairies	YES <input checked="" type="radio"/> 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, interspersed, microtopography	4	
	TOTAL SCORE Consult most recent score calibration report at <a href="http://www.epa.ohio.gov/dsw/401/index.aspx">http://www.epa.ohio.gov/dsw/401/index.aspx</a> to determine the wetland's category based on its quantitative score	36	Category based on score breakpoints  Category 2

Complete 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	<input checked="" type="radio"/> NO	Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> NO	Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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?	<input checked="" type="radio"/> YES  Wetland is assigned to the appropriate category based on the scoring range	<input type="radio"/> 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	<input checked="" type="radio"/> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<input checked="" type="radio"/> 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
		<input checked="" type="radio"/>	

**End of Ohio Rapid Assessment Method for Wetlands.**

## Wetland RLP-09ab

Site: FE Lincoln Park-Riverbend

Rater(s): Bill Leopold (AECOM)

Date:

1/8/2020

Field Id:

w-bl-20200108-02ab

**0** **0**

max 6 pts

subtotal

### Metric 1. Wetland Area (size).

Select one size class and assign score.

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

0.06 acres

**8** **8**

max 14 pts.

subtotal

### Metric 2. Upland buffers and surrounding land use.

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

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

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

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

**10.0** **18.0**

max 30 pts.

subtotal

### Metric 3. Hydrology.

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- |   |   |
|---|---|
| <input type="checkbox"/> ditch            | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile             | <input checked="" type="checkbox"/> filling/grading   |
| <input type="checkbox"/> dike             | <input checked="" type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir             | <input type="checkbox"/> dredging                     |
| <input type="checkbox"/> stormwater input | <input type="checkbox"/> Other:                       |

**11** **29**

max 20 pts.

subtotal

### Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> mowing            | <input type="checkbox"/> shrub/sapling removal          |
| <input type="checkbox"/> grazing                      | <input type="checkbox"/> herbaceous/aquatic bed removal |
| <input type="checkbox"/> clearcutting                 | <input type="checkbox"/> sedimentation                  |
| <input checked="" type="checkbox"/> selective cutting | <input type="checkbox"/> dredging                       |
| <input type="checkbox"/> woody debris removal         | <input type="checkbox"/> farming                        |
| <input type="checkbox"/> toxic pollutants             | <input type="checkbox"/> nutrient enrichment            |

**29**

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating

**Wetland RLP-09ab**

Site: FE Lincoln Park-Riverbend

Rater(s): Bill Leopold (AECOM)

Date:

1/8/2020

Field Id:

w-bl-20200108-02ab

29

subtotal this page

0

29

max 10 pts.

subtotal

**Metric 5. Special Wetlands.**

Check all that apply and score as indicated.

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

4

33

max 20pts.

subtotal

**Metric 6. Plant communities, interspersions, microtopography.****6a. Wetland Vegetation Communities.**

Score all present using 0 to 3 scale.

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

**6b. horizontal (plan view) Interspersion.**

Select only one.

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

**6c. Coverage of invasive plants. Refer**

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

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

**6d. Microtopography.**

Score all present using 0 to 3 scale.

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

**Vegetation Community Cover Scale**

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

**Narrative Description of Vegetation Quality**

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

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

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

**Mudflat and Open Water Class Quality**

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

**Microtopography Cover Scale**

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

Category 2

33 GRAND TOTAL(max 100 pts)



# ORAM Summary Worksheet

Wetland RLP-09ab

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input checked="" type="radio"/> NO	If yes, Category 1.
	Question 6. Bogs	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 7. Fens	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES <input checked="" type="radio"/> NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input checked="" type="radio"/> NO	If yes, Category 3
Question 11. Relict Wet Prairies	YES <input checked="" type="radio"/> 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, interspersed, microtopography	4	
	TOTAL SCORE Consult most recent score calibration report at <a href="http://www.epa.ohio.gov/dsw/401/index.aspx">http://www.epa.ohio.gov/dsw/401/index.aspx</a> to determine the wetland's category based on its quantitative score	33	Category based on score breakpoints  Category 2

Complete 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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	<input checked="" type="radio"/> 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?	<input checked="" type="radio"/> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<input checked="" type="radio"/> 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
		<input checked="" type="radio"/>	

**End of Ohio Rapid Assessment Method for Wetlands.**

# Wetland RLP-10

Site: JFE Lincoln Park-Riverbend

Rater(s): Bill Leopold (AECOM)

Date: 1/8/2020

Field Id:

w-bl-20200108-01

1 1

max 6 pts

subtotal

## Metric 1. Wetland Area (size).

Select one size class and assign score.

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

0.18 acres  
extends outside SC

9 10

max 14 pts.

subtotal

## Metric 2. Upland buffers and surrounding land use.

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

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

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

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

13.0 23.0

max 30 pts.

subtotal

## Metric 3. Hydrology.

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

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

13 36

max 20 pts.

subtotal

## Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

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

36

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating



# Wetland RLP-10

Site: JFE Lincoln Park-Riverbend

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 Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

5

41

max 20pts.

subtotal

## Metric 6. Plant communities, interspersions, microtopography.

### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

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

### 6b. horizontal (plan view) Interspersions.

Select only one.

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

### 6c. Coverage of invasive plants. Refer

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

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

### 6d. Microtopography.

Score all present using 0 to 3 scale.

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

### Vegetation Community Cover Scale

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

### Narrative Description of Vegetation Quality

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

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

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

### Mudflat and Open Water Class Quality

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

### Microtopography Cover Scale

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

Category 2

41

GRAND TOTAL(max 100 pts)

# ORAM Summary Worksheet

Wetland RLP-10

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input checked="" type="radio"/> NO	If yes, Category 1.
	Question 6. Bogs	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 7. Fens	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES <input checked="" type="radio"/> NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input checked="" type="radio"/> NO	If yes, Category 3
Question 11. Relict Wet Prairies	YES <input checked="" type="radio"/> 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, interspersed, microtopography	5	
	TOTAL SCORE Consult most recent score calibration report at <a href="http://www.epa.ohio.gov/dsw/401/index.aspx">http://www.epa.ohio.gov/dsw/401/index.aspx</a> to determine the wetland's category based on its quantitative score	41	Category based on score breakpoints  Category 2

Complete 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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?	<input checked="" type="radio"/> YES  Wetland is assigned to the appropriate category based on the scoring range	<input type="radio"/> 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	<input checked="" type="radio"/> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<input checked="" type="radio"/> 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
		<input checked="" type="radio"/>	

**End of Ohio Rapid Assessment Method for Wetlands.**



# Wetland RLP-11

Site: JFE Lincoln Park-Riverbend

Rater(s): Bill Leopold (AECOM)

Date: 1/7/2020

Field Id:

w-bl-20200107-05

0 0

max 6 pts

subtotal

## Metric 1. Wetland Area (size).

Select one size class and assign score.

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

0.01 acres

8 8

max 14 pts.

subtotal

## Metric 2. Upland buffers and surrounding land use.

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

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

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

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

13.0 21.0

max 30 pts.

subtotal

## Metric 3. Hydrology.

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

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

13 34

max 20 pts.

subtotal

## Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

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

34

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating

# Wetland RLP-11

Site: JFE Lincoln Park-Riverbend

Rater(s): Bill Leopold (AECOM)

Date: 1/7/2020

Field Id:

w-bl-20200107-05

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 Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

3

37

max 20pts.

subtotal

## Metric 6. Plant communities, interspersions, microtopography.

### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

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

### 6b. horizontal (plan view) Interspersions.

Select only one.

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

### 6c. Coverage of invasive plants. Refer

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

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

### 6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ 1 Vegetated hummocks/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 generally w/o presence of rare threatened or endangered spp to

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

### Mudflat and Open Water Class Quality

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

### Microtopography Cover Scale

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

Category 2

37 GRAND TOTAL(max 100 pts)

# ORAM Summary Worksheet

Wetland RLP-11

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input checked="" type="radio"/> NO	If yes, Category 1.
	Question 6. Bogs	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 7. Fens	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES <input checked="" type="radio"/> NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input checked="" type="radio"/> NO	If yes, Category 3
Question 11. Relict Wet Prairies	YES <input checked="" type="radio"/> 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, interspersed, microtopography	3	
	TOTAL SCORE Consult most recent score calibration report at <a href="http://www.epa.ohio.gov/dsw/401/index.aspx">http://www.epa.ohio.gov/dsw/401/index.aspx</a> to determine the wetland's category based on its quantitative score	37	Category based on score breakpoints  Category 2

Complete 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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?	<input checked="" type="radio"/> YES  Wetland is assigned to the appropriate category based on the scoring range	<input type="radio"/> 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	<input checked="" type="radio"/> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<input checked="" type="radio"/> 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
		<input checked="" type="radio"/>	

**End of Ohio Rapid Assessment Method for Wetlands.**

# Wetland RLP-12

Site: JFE Lincoln Park-Riverbend

Rater(s): Bill Leopold (AECOM)

Date: 1/7/2020

Field Id:

w-bl-20200107-04

0 0

max 6 pts

subtotal

## Metric 1. Wetland Area (size).

Select one size class and assign score.

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

0.03 acres

6 6

max 14 pts.

subtotal

## Metric 2. Upland buffers and surrounding land use.

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

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

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

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

13.0 19.0

max 30 pts.

subtotal

## Metric 3. Hydrology.

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

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

7 26

max 20 pts.

subtotal

## Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

- ☒ mowing
- ☐ grazing
- ☐ clearcutting
- ☒ 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: JFE Lincoln Park-Riverbend

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 Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

2

28

max 20pts.

subtotal

## Metric 6. Plant communities, interspersions, microtopography.

### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

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

### 6b. horizontal (plan view) Interspersions.

Select only one.

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

### 6c. Coverage of invasive plants. Refer

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

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

### 6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ 0 Vegetated hummocks/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 generally w/o presence of rare threatened or endangered spp to

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

### Mudflat and Open Water Class Quality

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

### Microtopography Cover Scale

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

Category 1

28 GRAND TOTAL(max 100 pts)



# ORAM Summary Worksheet

Wetland RLP-12

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input checked="" type="radio"/> NO	If yes, Category 1.
	Question 6. Bogs	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 7. Fens	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES <input checked="" type="radio"/> NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input checked="" type="radio"/> NO	If yes, Category 3
Question 11. Relict Wet Prairies	YES <input checked="" type="radio"/> 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, interspersed, microtopography	2	
	TOTAL SCORE Consult most recent score calibration report at <a href="http://www.epa.ohio.gov/dsw/401/index.aspx">http://www.epa.ohio.gov/dsw/401/index.aspx</a> to determine the wetland's category based on its quantitative score	28	Category based on score breakpoints  Category 1

Complete 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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?	<input checked="" type="radio"/> YES  Wetland is assigned to the appropriate category based on the scoring range	<input type="radio"/> 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	<input checked="" type="radio"/> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> Category 1	<input type="radio"/> Category 2	<input type="radio"/> Category 3
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**End of Ohio Rapid Assessment Method for Wetlands.**

# Wetland RLP-13

Site: FE Lincoln Park-Riverbend

Rater(s): Bill Leopold (AECOM)

Date: 1/6/2020

Field Id:

w-bl-20200106-01

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)
- ☒ 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

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

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

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

12.0 22.0

## Metric 3. Hydrology.

max 30 pts.

subtotal

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

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

9 31

## 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)
- ☐ Recovering (2)
- ☐ Recent or no recovery (1)

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

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

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

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

Check all disturbances observed

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

31

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating



## Wetland RLP-13

Site: FE Lincoln Park-Riverbend

Rater(s): Bill Leopold (AECOM)

Date:

1/6/2020

Field Id:

w-bl-20200106-01

31

subtotal this page

0

31

max 10 pts.

subtotal

### Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

6

37

max 20pts.

subtotal

### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

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

### 6b. horizontal (plan view) Interspersion.

Select only one.

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

### 6c. Coverage of invasive plants. Refer

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

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

### 6d. Microtopography.

Score all present using 0 to 3 scale.

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

Category 2

37

GRAND TOTAL(max 100 pts)

### Vegetation Community Cover Scale

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

### Narrative Description of Vegetation Quality

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

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

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

### Mudflat and Open Water Class Quality

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

### Microtopography Cover Scale

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

# ORAM Summary Worksheet

Wetland RLP-13

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input checked="" type="radio"/> NO	If yes, Category 1.
	Question 6. Bogs	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 7. Fens	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES <input checked="" type="radio"/> NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input checked="" type="radio"/> NO	If yes, Category 3
Question 11. Relict Wet Prairies	YES <input checked="" type="radio"/> 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, interspersed, microtopography	6	
	TOTAL SCORE Consult most recent score calibration report at <a href="http://www.epa.ohio.gov/dsw/401/index.aspx">http://www.epa.ohio.gov/dsw/401/index.aspx</a> to determine the wetland's category based on its quantitative score	37	Category based on score breakpoints  Category 2

Complete 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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?	<input checked="" type="radio"/> YES  Wetland is assigned to the appropriate category based on the scoring range	<input type="radio"/> 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	<input checked="" type="radio"/> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<input checked="" type="radio"/> 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
		<input checked="" type="radio"/>	

**End of Ohio Rapid Assessment Method for Wetlands.**



# Wetland RLP-14

Site: JFE Lincoln Park-Riverbend

Rater(s): Bill Leopold (AECOM)

Date: 1/7/2020

Field Id:

w-bl-20200107-03

2 2

max 6 pts

subtotal

## Metric 1. Wetland Area (size).

Select one size class and assign score.

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

0.36 acres

9 11

max 14 pts.

subtotal

## Metric 2. Upland buffers and surrounding land use.

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

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

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

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

13.0 24.0

max 30 pts.

subtotal

## Metric 3. Hydrology.

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

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

16 40

max 20 pts.

subtotal

## Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

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

40

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating

# Wetland RLP-14

Site: JFE Lincoln Park-Riverbend

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 Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

5

45

max 20pts.

subtotal

## Metric 6. Plant communities, interspersions, 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) Interspersions.

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 hummocks/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 generally w/o presence of rare threatened or endangered spp to

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

### Mudflat and Open Water Class Quality

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

### Microtopography Cover Scale

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

Category 2

45 GRAND TOTAL(max 100 pts)

# ORAM Summary Worksheet

Wetland RLP-14

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input checked="" type="radio"/> NO	If yes, Category 1.
	Question 6. Bogs	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 7. Fens	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES <input checked="" type="radio"/> NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input checked="" type="radio"/> NO	If yes, Category 3
Question 11. Relict Wet Prairies	YES <input checked="" type="radio"/> 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, interspersed, microtopography	5	
	TOTAL SCORE Consult most recent score calibration report at <a href="http://www.epa.ohio.gov/dsw/401/index.aspx">http://www.epa.ohio.gov/dsw/401/index.aspx</a> to determine the wetland's category based on its quantitative score	45	Category based on score breakpoints  Category 2

Complete 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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?	<input checked="" type="radio"/> YES  Wetland is assigned to the appropriate category based on the scoring range	<input type="radio"/> 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	<input checked="" type="radio"/> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<input checked="" type="radio"/> 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
		<input checked="" type="radio"/>	

**End of Ohio Rapid Assessment Method for Wetlands.**

# Wetland RLP-15ab

Site: FE Lincoln Park-Riverbend

Rater(s): Bill Leopold (AECOM)

Date: 1/7/2020

Field Id:

w-bl-20200107-02ab

1 1

max 6 pts

subtotal

## Metric 1. Wetland Area (size).

Select one size class and assign score.

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

0.24 acres

8 9

max 14 pts.

subtotal

## Metric 2. Upland buffers and surrounding land use.

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

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

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

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

13.0 22.0

max 30 pts.

subtotal

## Metric 3. Hydrology.

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

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

11 33

max 20 pts.

subtotal

## Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

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

33

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating

# Wetland RLP-15ab

Site: FE Lincoln Park-Riverbend

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 Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

4

37

max 20pts.

subtotal

## Metric 6. Plant communities, interspersions, microtopography.

### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

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

### 6b. horizontal (plan view) Interspersion.

Select only one.

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

### 6c. Coverage of invasive plants. Refer

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

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

### 6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ 1 Vegetated hummocks/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 generally w/o presence of rare threatened or endangered spp to

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

### Mudflat and Open Water Class Quality

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

### Microtopography Cover Scale

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

Category 2

37

GRAND TOTAL(max 100 pts)



# ORAM Summary Worksheet

Wetland RLP-15ab

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input checked="" type="radio"/> NO	If yes, Category 1.
	Question 6. Bogs	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 7. Fens	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES <input checked="" type="radio"/> NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input checked="" type="radio"/> NO	If yes, Category 3
Question 11. Relict Wet Prairies	YES <input checked="" type="radio"/> 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, interspersed, microtopography	4	
	TOTAL SCORE Consult most recent score calibration report at <a href="http://www.epa.ohio.gov/dsw/401/index.aspx">http://www.epa.ohio.gov/dsw/401/index.aspx</a> to determine the wetland's category based on its quantitative score	37	Category based on score breakpoints  Category 2

Complete 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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?	<input checked="" type="radio"/> YES  Wetland is assigned to the appropriate category based on the scoring range	<input type="radio"/> 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	<input checked="" type="radio"/> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<input checked="" type="radio"/> 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
		<input checked="" type="radio"/>	

**End of Ohio Rapid Assessment Method for Wetlands.**

# Wetland RLP-16abc

Site: FE Lincoln Park-Riverbend

Rater(s): Bill Leopold (AECOM)

Date:

1/6/2020

Field Id:

w-bl-20200106-02

3

3

## Metric 1. Wetland Area (size).

max 6 pts

subtotal

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)  
☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)  
☐ 10 to <25 acres (4 to <10.1ha) (4 pts)  
☒ 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

7

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

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

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

12.0

22.0

## Metric 3. Hydrology.

max 30 pts.

subtotal

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

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

9

31

## 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)  
☒ Recovering (2)  
☐ Recent or no recovery (1)

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

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

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

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

Check all disturbances observed

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

31

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating



# Wetland RLP-16abc

Site: FE Lincoln Park-Riverbend

Rater(s): Bill Leopold (AECOM)

Date:

1/6/2020

Field Id:

w-bl-20200106-02

31

subtotal this page

0

31

max 10 pts.

subtotal

## Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

9

40

max 20pts.

subtotal

## Metric 6. Plant communities, interspersions, microtopography.

### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

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

### 6b. horizontal (plan view) Interspersions.

Select only one.

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

### 6c. Coverage of invasive plants. Refer

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

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

### 6d. Microtopography.

Score all present using 0 to 3 scale.

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

### Vegetation Community Cover Scale

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

### Narrative Description of Vegetation Quality

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

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

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

### Mudflat and Open Water Class Quality

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

### Microtopography Cover Scale

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

Category 2

40 GRAND TOTAL(max 100 pts)

# ORAM Summary Worksheet

Wetland RLP-16abc

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input checked="" type="radio"/> NO	If yes, Category 1.
	Question 6. Bogs	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 7. Fens	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES <input checked="" type="radio"/> NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input checked="" type="radio"/> NO	If yes, Category 3
Question 11. Relict Wet Prairies	YES <input checked="" type="radio"/> 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, interspersions, microtopography	9	
	TOTAL SCORE Consult most recent score calibration report at <a href="http://www.epa.ohio.gov/dsw/401/index.aspx">http://www.epa.ohio.gov/dsw/401/index.aspx</a> to determine the wetland's category based on its quantitative score	40	Category based on score breakpoints  Category 2

Complete 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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?	<input checked="" type="radio"/> YES  Wetland is assigned to the appropriate category based on the scoring range	<input type="radio"/> 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	<input checked="" type="radio"/> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<input checked="" type="radio"/> 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
		<input checked="" type="radio"/>	

**End of Ohio Rapid Assessment Method for Wetlands.**



# Wetland RLP-17abc

Site: FE Lincoln Park-Riverbend

Rater(s): Bill Leopold (AECOM)

Date: 1/7/2020

Field Id:

w-bl-20200107-01abc

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)
- ☒ 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)

1.08 acres

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

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

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

13.0 23.0

## Metric 3. Hydrology.

max 30 pts.

subtotal

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

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

11.5 34.5

## 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)
- ☐ Recovering (2)
- ☐ Recent or no recovery (1)

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

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

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

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

Check all disturbances observed

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

34.5

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating

# Wetland RLP-17abc

Site: FE Lincoln Park-Riverbend

Rater(s): Bill Leopold (AECOM)

Date:

1/7/2020

Field Id:

w-bl-20200107-01abc

34.5

subtotal this page

0 34.5

max 10 pts.

subtotal

## Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

11 45.5

max 20pts.

subtotal

## Metric 6. Plant communities, interspersions, 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)
- ☒ 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 hummocks/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 generally w/o presence of rare threatened or endangered spp to

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

### Mudflat and Open Water Class Quality

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

### Microtopography Cover Scale

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

Category 2

45.5 GRAND TOTAL(max 100 pts)

# ORAM Summary Worksheet

Wetland RLP-17abc

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input checked="" type="radio"/> NO	If yes, Category 1.
	Question 6. Bogs	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 7. Fens	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES <input checked="" type="radio"/> NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input checked="" type="radio"/> NO	If yes, Category 3
Question 11. Relict Wet Prairies	YES <input checked="" type="radio"/> 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, interspersed, microtopography	11	
	TOTAL SCORE Consult most recent score calibration report at <a href="http://www.epa.ohio.gov/dsw/401/index.aspx">http://www.epa.ohio.gov/dsw/401/index.aspx</a> to determine the wetland's category based on its quantitative score	45.5	Category based on score breakpoints  Category 2

## Complete 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	<input checked="" type="radio"/> NO	Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> NO	Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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?	<input checked="" type="radio"/> YES  Wetland is assigned to the appropriate category based on the scoring range	<input type="radio"/> 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	<input checked="" type="radio"/> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<input checked="" type="radio"/> 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
		<input checked="" type="radio"/>	

**End of Ohio Rapid Assessment Method for Wetlands.**

# Wetland RLP-18ab

Site: FE Lincoln Park-Riverbend

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

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

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

11.0 21.0

## Metric 3. Hydrology.

max 30 pts.

subtotal

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

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

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)
- ☒ Recovered (3)
- ☐ Recovering (2)
- ☐ Recent or no recovery (1)

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

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

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

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

Check all disturbances observed

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

33

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating

# Wetland RLP-18ab

Site: FE Lincoln Park-Riverbend

Rater(s): Audrey Hanner

Date:

1/7/2020

Field Id:

w-aeH-20200107-09ab

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 Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

6

39

max 20pts.

subtotal

## Metric 6. Plant communities, interspersions, microtopography.

### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

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

### 6b. horizontal (plan view) Interspersions.

Select only one.

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

### 6c. Coverage of invasive plants. Refer

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

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

### 6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ 1 Vegetated hummocks/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 generally w/o presence of rare threatened or endangered spp to

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

### Mudflat and Open Water Class Quality

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

### Microtopography Cover Scale

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

Category 2

39 GRAND TOTAL(max 100 pts)



# ORAM Summary Worksheet

Wetland RLP-18ab

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input checked="" type="radio"/> NO	If yes, Category 1.
	Question 6. Bogs	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 7. Fens	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES <input checked="" type="radio"/> NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input checked="" type="radio"/> NO	If yes, Category 3
Question 11. Relict Wet Prairies	YES <input checked="" type="radio"/> 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, interspersed, microtopography	6	
	TOTAL SCORE Consult most recent score calibration report at <a href="http://www.epa.ohio.gov/dsw/401/index.aspx">http://www.epa.ohio.gov/dsw/401/index.aspx</a> to determine the wetland's category based on its quantitative score	39	Category based on score breakpoints  Category 2

Complete 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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?	<input checked="" type="radio"/> YES  Wetland is assigned to the appropriate category based on the scoring range	<input type="radio"/> 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	<input checked="" type="radio"/> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<input checked="" type="radio"/> 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
		<input checked="" type="radio"/>	

**End of Ohio Rapid Assessment Method for Wetlands.**

# Wetland RLP-19ab

Site: FE Lincoln Park-Riverbend

Rater(s): Audrey Hanner

Date:

1/7/2020

Field Id:

w-aeH-20200107-10ab

2 2

max 6 pts

subtotal

## Metric 1. Wetland Area (size).

Select one size class and assign score.

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

1.18 acres  
extends outside SC

8 10

max 14 pts

subtotal

## Metric 2. Upland buffers and surrounding land use.

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

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

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

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

11.0 21.0

max 30 pts

subtotal

## Metric 3. Hydrology.

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

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

12 33

max 20 pts

subtotal

## Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

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

33

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating



# Wetland RLP-19ab

Site: FE Lincoln Park-Riverbend

Rater(s): Audrey Hanner

Date:

1/7/2020

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 Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

8

41

max 20pts.

subtotal

## Metric 6. Plant communities, interspersions, microtopography.

### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

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

### 6b. horizontal (plan view) Interspersion.

Select only one.

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

### 6c. Coverage of invasive plants. Refer

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

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

### 6d. Microtopography.

Score all present using 0 to 3 scale.

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

Field Id:

w-aeH-20200107-10ab

### Vegetation Community Cover Scale

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

### Narrative Description of Vegetation Quality

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

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

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

### Mudflat and Open Water Class Quality

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

### Microtopography Cover Scale

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

Category 2

41 GRAND TOTAL(max 100 pts)

# ORAM Summary Worksheet

Wetland RLP-19ab

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input checked="" type="radio"/> NO	If yes, Category 1.
	Question 6. Bogs	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 7. Fens	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES <input checked="" type="radio"/> NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input checked="" type="radio"/> NO	If yes, Category 3
Question 11. Relict Wet Prairies	YES <input checked="" type="radio"/> 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, interspersed, microtopography	8	
	TOTAL SCORE Consult most recent score calibration report at <a href="http://www.epa.ohio.gov/dsw/401/index.aspx">http://www.epa.ohio.gov/dsw/401/index.aspx</a> to determine the wetland's category based on its quantitative score	41	Category based on score breakpoints  Category 2

Complete 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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?	<input checked="" type="radio"/> YES  Wetland is assigned to the appropriate category based on the scoring range	<input type="radio"/> 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 within 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	<input checked="" type="radio"/> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<input checked="" type="radio"/> 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
		<input checked="" type="radio"/>	

**End of Ohio Rapid Assessment Method for Wetlands.**



## Wetland RLP-20

Site: FE Lincoln Park-Riverbend

Rater(s): Audrey Hanner

Date:

1/7/2020

2 2

### Metric 1. Wetland Area (size).

Field Id:

w-aeH-20200107-02

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)
  - ☐ <0.1 acres (0.04ha) (0 pts)

0.31 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)
- ☒ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

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

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

15.0 25.0

### Metric 3. Hydrology.

max 30 pts.

subtotal

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> ditch | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile             | <input checked="" type="checkbox"/> filling/grading   |
| <input type="checkbox"/> dike             | <input checked="" type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir             | <input type="checkbox"/> dredging                     |
| <input type="checkbox"/> stormwater input | <input type="checkbox"/> Other:                       |

9 34

### 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)
- ☐ Recovering (2)
- ☐ Recent or no recovery (1)

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

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

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

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

Check all disturbances observed

- |   |   |
|---|---|
| <input type="checkbox"/> mowing                       | <input checked="" type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing                      | <input type="checkbox"/> herbaceous/aquatic bed removal   |
| <input checked="" type="checkbox"/> clearcutting      | <input checked="" type="checkbox"/> sedimentation         |
| <input checked="" type="checkbox"/> selective cutting | <input type="checkbox"/> dredging                         |
| <input type="checkbox"/> woody debris removal         | <input type="checkbox"/> farming                          |
| <input checked="" type="checkbox"/> toxic pollutants  | <input type="checkbox"/> nutrient enrichment              |

34

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating

# Wetland RLP-20

Site: FE Lincoln Park-Riverbend

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 Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

8

42

max 20pts.

subtotal

## Metric 6. Plant communities, interspersions, 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) Interspersions.

Select only one.

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

### 6c. Coverage of invasive plants. Refer

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

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

### 6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ 0 Vegetated hummocks/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 generally w/o presence of rare threatened or endangered spp to

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

### Mudflat and Open Water Class Quality

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

### Microtopography Cover Scale

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

Category 2

42 GRAND TOTAL(max 100 pts)

# ORAM Summary Worksheet

Wetland RLP-20

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 1.
	Question 6. Bogs	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 7. Fens	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3
	Question 11. Relict Wet Prairies	YES <input type="radio"/> NO <input checked="" type="radio"/>	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, interspersed, microtopography	8	
	TOTAL SCORE Consult most recent score calibration report at <a href="http://www.epa.ohio.gov/dsw/401/index.aspx">http://www.epa.ohio.gov/dsw/401/index.aspx</a> to determine the wetland's category based on its quantitative score	42	Category based on score breakpoints  Category 2

## Complete 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	<input checked="" type="radio"/> NO	Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> NO	Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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?	<input checked="" type="radio"/> YES  Wetland is assigned to the appropriate category based on the scoring range	<input type="radio"/> 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	<input checked="" type="radio"/> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> Category 2	Category 3
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**End of Ohio Rapid Assessment Method for Wetlands.**

# Wetland RLP-21ab

Site: FE Lincoln Park-Riverbend

Rater(s): Audrey Hanner

Date:

1/7/2020

Field Id:

w-aeH-20200107-03

1 1

max 6 pts

subtotal

## Metric 1. Wetland Area (size).

Select one size class and assign score.

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

0.25 acres

8 9

max 14 pts.

subtotal

## Metric 2. Upland buffers and surrounding land use.

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

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

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

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

10.5 19.5

max 30 pts.

subtotal

## Metric 3. Hydrology.

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

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

9 28.5

max 20 pts.

subtotal

## Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

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

28.5

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating

# Wetland RLP-21ab

Site: FE Lincoln Park-Riverbend

Rater(s): Audrey Hanner

Date:

1/7/2020

28.5

subtotal this page

0 28.5

max 10 pts.

subtotal

## Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

6 34.5

max 20pts.

subtotal

## Metric 6. Plant communities, interspersions, microtopography.

### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

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

### 6b. horizontal (plan view) Interspersion.

Select only one.

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

### 6c. Coverage of invasive plants. Refer

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

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

### 6d. Microtopography.

Score all present using 0 to 3 scale.

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

Field Id:

w-aeH-20200107-03

### Vegetation Community Cover Scale

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

### Narrative Description of Vegetation Quality

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

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

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

### Mudflat and Open Water Class Quality

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

### Microtopography Cover Scale

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

Category 2

34.5 GRAND TOTAL(max 100 pts)



# ORAM Summary Worksheet

Wetland RLP-21a,b

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 1.
	Question 6. Bogs	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 7. Fens	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3
Question 11. Relict Wet Prairies	YES <input type="radio"/> NO <input checked="" type="radio"/>	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, interspersed, microtopography	6	
	TOTAL SCORE Consult most recent score calibration report at <a href="http://www.epa.ohio.gov/dsw/401/index.aspx">http://www.epa.ohio.gov/dsw/401/index.aspx</a> to determine the wetland's category based on its quantitative score	34.5	Category based on score breakpoints  Category 2

Complete 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	<input checked="" type="radio"/> NO	Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> NO	Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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	<input checked="" type="radio"/> 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 within the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	<input checked="" type="radio"/> YES  Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	<input type="radio"/> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> Category 2	Category 3
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**End of Ohio Rapid Assessment Method for Wetlands.**

# Wetland RLP-22

Site: JFE Lincoln Park-Riverbend

Rater(s): Audrey Hanner

Date:

1/7/2020

Field Id:

w-aeH-20200107-04

1 1

max 6 pts

subtotal

## Metric 1. Wetland Area (size).

Select one size class and assign score.

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

0.13 acres

8 9

max 14 pts.

subtotal

## Metric 2. Upland buffers and surrounding land use.

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

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

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

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

13.0 22.0

max 30 pts.

subtotal

## Metric 3. Hydrology.

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> ditch | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile             | <input checked="" type="checkbox"/> filling/grading   |
| <input type="checkbox"/> dike             | <input checked="" type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir             | <input type="checkbox"/> dredging                     |
| <input type="checkbox"/> stormwater input | <input type="checkbox"/> Other:                       |

6 28

max 20 pts.

subtotal

## Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> mowing            | <input checked="" type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing                      | <input type="checkbox"/> herbaceous/aquatic bed removal   |
| <input checked="" type="checkbox"/> clearcutting      | <input checked="" type="checkbox"/> sedimentation         |
| <input checked="" type="checkbox"/> selective cutting | <input type="checkbox"/> dredging                         |
| <input type="checkbox"/> woody debris removal         | <input type="checkbox"/> farming                          |
| <input checked="" type="checkbox"/> toxic pollutants  | <input type="checkbox"/> nutrient enrichment              |

28

subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating



# Wetland RLP-22

Site: JFE Lincoln Park-Riverbend

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 Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

-2

26

max 20pts.

subtotal

## Metric 6. Plant communities, interspersions, microtopography.

### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

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

### 6b. horizontal (plan view) Interspersions.

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

### Vegetation Community Cover Scale

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

### Narrative Description of Vegetation Quality

- Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
- Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to
- A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

### Mudflat and Open Water Class Quality

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

### Microtopography Cover Scale

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

Category 1

26

GRAND TOTAL(max 100 pts)

# ORAM Summary Worksheet

Wetland RLP-22

		circle answer or insert score		Result
Narrative Rating	Question 1. Critical Habitat	YES	<input checked="" type="radio"/> NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	<input checked="" type="radio"/> NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	<input checked="" type="radio"/> NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	<input checked="" type="radio"/> NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	<input checked="" type="radio"/> NO	If yes, Category 1.
	Question 6. Bogs	YES	<input checked="" type="radio"/> NO	If yes, Category 3.
	Question 7. Fens	YES	<input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	<input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	<input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	<input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES	<input checked="" type="radio"/> NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	<input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	<input checked="" type="radio"/> NO	If yes, Category 3
Question 11. Relict Wet Prairies	YES	<input checked="" type="radio"/> 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, interspersed, microtopography	-2		
	TOTAL SCORE Consult most recent score calibration report at <a href="http://www.epa.ohio.gov/dsw/401/index.aspx">http://www.epa.ohio.gov/dsw/401/index.aspx</a> to determine the wetland's category based on its quantitative score	26		Category based on score breakpoints  Category 1

Complete 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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?	<input checked="" type="radio"/> YES  Wetland is assigned to the appropriate category based on the scoring range	<input type="radio"/> 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 within 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	<input checked="" type="radio"/> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> Category 1	<input type="radio"/> Category 2	<input type="radio"/> Category 3

**End of Ohio Rapid Assessment Method for Wetlands.**



# Wetland RLP-23

Site: JFE Lincoln Park-Riverbend

Rater(s): Audrey Hanner

Date:

1/7/2020

Field Id:

w-aeh-20200107-05

1 1

max 6 pts

subtotal

## Metric 1. Wetland Area (size).

Select one size class and assign score.

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

0.13 acres

5 6

max 14 pts.

subtotal

## Metric 2. Upland buffers and surrounding land use.

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

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

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

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

14.5 20.5

max 30 pts.

subtotal

## Metric 3. Hydrology.

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

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

12 32.5

max 20 pts.

subtotal

## Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

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

32.5

subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

# Wetland RLP-23

Site: JFE Lincoln Park-Riverbend

Rater(s): Audrey Hanner

Date:

1/7/2020

Field Id:

w-aeH-20200107-05

32.5

subtotal this page

0 32.5

max 10 pts.

subtotal

## Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

3 35.5

max 20pts.

subtotal

## Metric 6. Plant communities, interspersions, microtopography.

### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

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

### 6b. horizontal (plan view) Interspersions.

Select only one.

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

### 6c. Coverage of invasive plants. Refer

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

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

### 6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussucks
- ☐ 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 generally w/o presence of rare threatened or endangered spp to

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

### Mudflat and Open Water Class Quality

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

### Microtopography Cover Scale

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

Category 2

35.5 GRAND TOTAL(max 100 pts)

# ORAM Summary Worksheet

Wetland RLP-23

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 1.
	Question 6. Bogs	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 7. Fens	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3
Question 11. Relict Wet Prairies	YES <input type="radio"/> NO <input checked="" type="radio"/>	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, interspersed, microtopography	3	
	TOTAL SCORE Consult most recent score calibration report at <a href="http://www.epa.ohio.gov/dsw/401/index.aspx">http://www.epa.ohio.gov/dsw/401/index.aspx</a> to determine the wetland's category based on its quantitative score	35.5	Category based on score breakpoints  Category 2

## Complete 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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?	<input checked="" type="radio"/> YES  Wetland is assigned to the appropriate category based on the scoring range	<input type="radio"/> 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	<input checked="" type="radio"/> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> Category 2	Category 3
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**End of Ohio Rapid Assessment Method for Wetlands.**

# Wetland RLP-24

Site: FE Lincoln Park-Riverbend

Rater(s): Audrey Hanner

Date:

1/7/2020

Field Id:

w-aeH-20200107-06

0 0

max 6 pts

subtotal

## Metric 1. Wetland Area (size).

Select one size class and assign score.

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

0.08 acres

5 5

max 14 pts

subtotal

## Metric 2. Upland buffers and surrounding land use.

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

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

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

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

14.5 19.5

max 30 pts

subtotal

## Metric 3. Hydrology.

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

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

11 30.5

max 20 pts

subtotal

## Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

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

30.5

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating

# Wetland RLP-24

Site: FE Lincoln Park-Riverbend

Rater(s): Audrey Hanner

Date:

1/7/2020

Field Id:

w-aeh-20200107-06

30.5

subtotal this page

0 30.5

max 10 pts.

subtotal

## Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

0 30.5

max 20pts.

subtotal

## Metric 6. Plant communities, interspersions, microtopography.

### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

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

### 6b. horizontal (plan view) Interspersions.

Select only one.

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

### 6c. Coverage of invasive plants. Refer

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

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

### 6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussucks
- ☒ 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 generally w/o presence of rare threatened or endangered spp to

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

### Mudflat and Open Water Class Quality

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

### Microtopography Cover Scale

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

Category 2

30.5 GRAND TOTAL(max 100 pts)



# ORAM Summary Worksheet

Wetland RLP-24

circle answer or insert score				Result
Narrative Rating	Question 1. Critical Habitat	YES	<input type="radio"/> NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	<input type="radio"/> NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	<input type="radio"/> NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	<input type="radio"/> NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	<input type="radio"/> NO	If yes, Category 1.
	Question 6. Bogs	YES	<input type="radio"/> NO	If yes, Category 3.
	Question 7. Fens	YES	<input type="radio"/> NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	<input type="radio"/> NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	<input type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	<input type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES	<input type="radio"/> NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	<input type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	<input type="radio"/> NO	If yes, Category 3
Question 11. Relict Wet Prairies	YES	<input type="radio"/> 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, interspersed, microtopography	0		
	TOTAL SCORE Consult most recent score calibration report at <a href="http://www.epa.ohio.gov/dsw/401/index.aspx">http://www.epa.ohio.gov/dsw/401/index.aspx</a> to determine the wetland's category based on its quantitative score	30.5		Category based on score breakpoints  Category 2

Complete 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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	<input checked="" type="radio"/> 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 within the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	<input checked="" type="radio"/> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> Category 2	Category 3
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**End of Ohio Rapid Assessment Method for Wetlands.**

## Wetland RLP-25

Site: FE Lincoln Park-Riverbend

Rater(s): Audrey Hanner

Date:

1/7/2020

0 0

max 6 pts

subtotal

### Metric 1. Wetland Area (size).

Select one size class and assign score.

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

Field Id:

w-aeh-20200107-07

0.03 acres

3 3

max 14 pts

subtotal

### Metric 2. Upland buffers and surrounding land use.

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

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

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

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

10.5 13.5

max 30 pts

subtotal

### Metric 3. Hydrology.

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

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

3c. Maximum water depth. Select one.

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> ditch | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile             | <input checked="" type="checkbox"/> filling/grading   |
| <input type="checkbox"/> dike             | <input checked="" type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir             | <input type="checkbox"/> dredging                     |
| <input type="checkbox"/> stormwater input | <input type="checkbox"/> Other:                       |

7 20.5

max 20 pts

subtotal

### Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> mowing               | <input checked="" type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing                         | <input type="checkbox"/> herbaceous/aquatic bed removal   |
| <input checked="" type="checkbox"/> clearcutting         | <input checked="" type="checkbox"/> sedimentation         |
| <input checked="" type="checkbox"/> selective cutting    | <input type="checkbox"/> dredging                         |
| <input checked="" type="checkbox"/> woody debris removal | <input type="checkbox"/> farming                          |
| <input type="checkbox"/> toxic pollutants                | <input type="checkbox"/> nutrient enrichment              |

20.5

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating



# Wetland RLP-25

Site: FE Lincoln Park-Riverbend

Rater(s): Audrey Hanner

Date:

1/7/2020

Field Id:

w-aeH-20200107-07

20.5

subtotal this page

0 20.5

max 10 pts.

subtotal

## Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

-1 19.5

max 20pts.

subtotal

## Metric 6. Plant communities, interspersions, microtopography.

### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

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

### 6b. horizontal (plan view) Interspersions.

Select only one.

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

### 6c. Coverage of invasive plants. Refer

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

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

### 6d. Microtopography.

Score all present using 0 to 3 scale.

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

### Vegetation Community Cover Scale

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

### Narrative Description of Vegetation Quality

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

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

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

### Mudflat and Open Water Class Quality

- 0 Absent <0.1ha (0.247 acres)
- 1 Low 0.1 to <1ha (0.247 to 2.47 acres)
- 2 Moderate 1 to <4ha (2.47 to 9.88 acres)
- 3 High 4ha (9.88 acres) or more

### Microtopography Cover Scale

- 0 Absent
- 1 Present very small amounts or if more common of marginal quality
- 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality
- 3 Present in moderate or greater amounts and of highest quality

Category 1

19.5 GRAND TOTAL(max 100 pts)

# ORAM Summary Worksheet

Wetland RLP-25

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 1.
	Question 6. Bogs	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 7. Fens	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3
Question 11. Relict Wet Prairies	YES <input type="radio"/> NO <input checked="" type="radio"/>	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, interspersed, microtopography	-1	
	TOTAL SCORE Consult most recent score calibration report at <a href="http://www.epa.ohio.gov/dsw/401/index.aspx">http://www.epa.ohio.gov/dsw/401/index.aspx</a> to determine the wetland's category based on its quantitative score	19.5	Category based on score breakpoints  Category 1

Complete 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	<input checked="" type="radio"/> NO	Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> NO	Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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?	<input checked="" type="radio"/> YES  Wetland is assigned to the appropriate category based on the scoring range	<input type="radio"/> 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	<input checked="" type="radio"/> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> Category 1	<input type="radio"/> Category 2	<input type="radio"/> Category 3
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**End of Ohio Rapid Assessment Method for Wetlands.**



# Wetland RLP-26

Site: FE Lincoln Park-Riverbend

Rater(s): Audrey Hanner

Date:

1/7/2020

Field Id:

w-aeH-20200107-08

0 0

max 6 pts

subtotal

## Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☒ <0.1 acres (0.04ha) (0 pts)

0.04 acres  
extends outside SC

2 2

max 14 pts

subtotal

## Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

6.0 8.0

max 30 pts

subtotal

## Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/Intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☒ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input
- ☐ point source (nonstormwater)
- ☒ filling/grading
- ☒ road bed/RR track
- ☐ dredging
- ☐ Other:

4 12

max 20 pts

subtotal

## Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☒ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☐ Recovering (3)
- ☒ Recent or no recovery (1)

Check all disturbances observed

- ☒ mowing
- ☐ grazing
- ☒ clearcutting
- ☒ selective cutting
- ☒ woody debris removal
- ☐ toxic pollutants
- ☒ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☒ sedimentation
- ☐ dredging
- ☐ farming
- ☐ nutrient enrichment

12

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating

# Wetland RLP-26

Site: FE Lincoln Park-Riverbend

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 Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

-4

8

max 20pts.

subtotal

## Metric 6. Plant communities, interspersions, microtopography.

### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ 1 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

### 6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

### 6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- ☒ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

### 6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussucks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

### Vegetation Community Cover Scale

- 0 Absent or comprises <0.1ha (0.2471 acres) contiguous area
- 1 Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
- 2 Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality
- 3 Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality

### Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

### Mudflat and Open Water Class Quality

- 0 Absent <0.1ha (0.247 acres)
- 1 Low 0.1 to <1ha (0.247 to 2.47 acres)
- 2 Moderate 1 to <4ha (2.47 to 9.88 acres)
- 3 High 4ha (9.88 acres) or more

### Microtopography Cover Scale

- 0 Absent
- 1 Present very small amounts or if more common of marginal quality
- 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality
- 3 Present in moderate or greater amounts and of highest quality

Category 1

8

GRAND TOTAL(max 100 pts)

# ORAM Summary Worksheet

Wetland RLP-26

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 1.
	Question 6. Bogs	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 7. Fens	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3
Question 11. Relict Wet Prairies	YES <input type="radio"/> NO <input checked="" type="radio"/>	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, interspersed, microtopography	-4	
	TOTAL SCORE Consult most recent score calibration report at <a href="http://www.epa.ohio.gov/dsw/401/index.aspx">http://www.epa.ohio.gov/dsw/401/index.aspx</a> to determine the wetland's category based on its quantitative score	8	Category based on score breakpoints  Category 1

## Complete 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	<input checked="" type="radio"/> NO	Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> NO	Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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?	<input checked="" type="radio"/> YES  Wetland is assigned to the appropriate category based on the scoring range	<input type="radio"/> 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	<input checked="" type="radio"/> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> Category 1	<input type="radio"/> Category 2	<input type="radio"/> Category 3
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**End of Ohio Rapid Assessment Method for Wetlands.**

# Wetland RLP-27

Site: FE Lincoln Park-Riverbend

Rater(s): Audrey Hanner

Date:

1/7/2020

Field Id:

w-aeH-20200107-01

0 0

max 6 pts

subtotal

## Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☒ <0.1 acres (0.04ha) (0 pts)

0.01 acres

3 3

max 14 pts

subtotal

## Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☒ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

6.0 9.0

max 30 pts

subtotal

## Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/Intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☒ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input
- ☐ point source (nonstormwater)
- ☒ filling/grading
- ☒ road bed/RR track
- ☐ dredging
- ☐ Other:

7 16

max 20 pts

subtotal

## Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- ☐ mowing
- ☐ grazing
- ☒ clearcutting
- ☒ selective cutting
- ☐ woody debris removal
- ☐ toxic pollutants
- ☒ 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: FE Lincoln Park-Riverbend

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 Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

3

19

max 20pts.

subtotal

## Metric 6. Plant communities, interspersions, microtopography.

### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ 1 Emergent
- ☐ Shrub
- ☐ 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)
- ☐ None (0)

### 6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

### 6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ 0 Vegetated hummocks/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 generally w/o presence of rare threatened or endangered spp to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

### Mudflat and Open Water Class Quality

- 0 Absent <0.1ha (0.247 acres)
- 1 Low 0.1 to <1ha (0.247 to 2.47 acres)
- 2 Moderate 1 to <4ha (2.47 to 9.88 acres)
- 3 High 4ha (9.88 acres) or more

### Microtopography Cover Scale

- 0 Absent
- 1 Present very small amounts or if more common of marginal quality
- 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality
- 3 Present in moderate or greater amounts and of highest quality

Category 1

19

GRAND TOTAL(max 100 pts)



# ORAM Summary Worksheet

Wetland RLP-27

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 1.
	Question 6. Bogs	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 7. Fens	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted.	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3
Question 11. Relict Wet Prairies	YES <input type="radio"/> NO <input checked="" type="radio"/>	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, interspersed, microtopography	3	
	TOTAL SCORE Consult most recent score calibration report at <a href="http://www.epa.ohio.gov/dsw/401/index.aspx">http://www.epa.ohio.gov/dsw/401/index.aspx</a> to determine the wetland's category based on its quantitative score	19	Category based on score breakpoints  Category 1

Complete 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> NO  Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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?	<input checked="" type="radio"/> YES  Wetland is assigned to the appropriate category based on the scoring range	<input type="radio"/> 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 within 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	<input checked="" type="radio"/> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<input checked="" type="radio"/> 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	<input checked="" type="radio"/> Category 1	<input type="radio"/> Category 2	<input type="radio"/> Category 3
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**End of Ohio Rapid Assessment Method for Wetlands.**

<b>Wetland ID:</b>	<b>Wetland RLP-28</b>
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<b>Site:</b>	FE Lincoln Park-Riverbend	<b>Rater(s):</b>	M.R.Kline, L.H.Jacks	<b>Date:</b>	8/20/2020
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<b>1.0</b>	<b>1.0</b>
max 6 pts	subtotal

### Metric 1. Wetland Area (size).

- Select one size class and assign score.
- ☐ >50 acres (>20.2ha) (6 pts)
  - ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
  - ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
  - ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
  - ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
  - ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
  - ☐ <0.1 acres (0.04ha) (0 pts)

### Field ID:

W-200820-MRK-001 PFO

Delineated acres:	0.10
Total acres:	0.10

<b>9.0</b>	<b>10.0</b>
max 14 pts.	subtotal

### Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☒ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☒ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

<b>9.0</b>	<b>19.0</b>
max 30 pts.	subtotal

### Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☒ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☒ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- |   |   |
|---|---|
| <input type="checkbox"/> ditch            | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile             | <input type="checkbox"/> filling/grading              |
| <input type="checkbox"/> dike             | <input type="checkbox"/> road bed/RR track            |
| <input type="checkbox"/> weir             | <input type="checkbox"/> dredging                     |
| <input type="checkbox"/> stormwater input | <input type="checkbox"/> Other:                       |

<b>11.0</b>	<b>30.0</b>
max 20 pts.	subtotal

### Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☒ None or none apparent (4)
- ☐ Recovered (3)
- ☐ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☒ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☒ Recovered (6)
- ☐ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- |   |   |
|---|---|
| <input type="checkbox"/> mowing                       | <input type="checkbox"/> shrub/sapling removal          |
| <input type="checkbox"/> grazing                      | <input type="checkbox"/> herbaceous/aquatic bed removal |
| <input type="checkbox"/> clearcutting                 | <input checked="" type="checkbox"/> sedimentation       |
| <input checked="" type="checkbox"/> selective cutting | <input type="checkbox"/> dredging                       |
| <input type="checkbox"/> woody debris removal         | <input type="checkbox"/> farming                        |
| <input type="checkbox"/> toxic pollutants             | <input type="checkbox"/> nutrient enrichment            |

<b>30.0</b>
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating



Wetland ID: Wetland RLP-28

Site: FE Lincoln Park-Riverbend Rater(s): M R Kline, I. H. Jacks Date: 8/20/2020

30.0

subtotal this page

Field ID:

W-200820-MRK-001 PFO

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 Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

1.0 31.0

max 20pts.

subtotal

### Metric 6. Plant communities, interspersions, 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) interspersions.

Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

#### 6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☒ Nearly absent <5% cover (0)
- ☐ Absent (1)

#### 6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ 0 Vegetated hummocks/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, moderate although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

#### Mudflat and Open Water Class Quality

- 0 Absent <0.1ha (0.247 acres)
- 1 Low 0.1 to <1ha (0.247 to 2.47 acres)
- 2 Moderate 1 to <4ha (2.47 to 9.88 acres)
- 3 High 4ha (9.88 acres) or more

#### Microtopography Cover Scale

- 0 Absent
- 1 Present very small amounts or if more common of marginal quality
- 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality
- 3 Present in moderate or greater amounts and of highest quality

31.0 TOTAL (Max 100 pts)

1 or 2 Gray Zone Category

<b>Wetland ID:</b>	<b>Wetland RLP-28</b>
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### ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1. Critical Habitat	YES	<b>*NO</b>	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	<b>*NO</b>	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	<b>*NO</b>	If yes, Category 3.
	Question 4. Significant bird habitat	YES	<b>*NO</b>	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	<b>*NO</b>	If yes, Category 1.
	Question 6. Bogs	YES	<b>*NO</b>	If yes, Category 3.
	Question 7. Fens	YES	<b>*NO</b>	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	<b>*NO</b>	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	<b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	<b>*NO</b>	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	<b>*NO</b>	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	<b>*NO</b>	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, interspersions, microtopography	1		
	TOTAL SCORE	31		Category based on score breakpoints

**Complete Wetland Categorization Worksheet.**

<b>Wetland ID:</b>	<b>Wetland RLP-28</b>
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## 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 <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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 <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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
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**End of Ohio Rapid Assessment Method for Wetlands.**



<b>Wetland ID:</b>	<b>Wetland RLP-29a/b</b>
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<b>Site:</b>	FE Lincoln Park-Riverbend	<b>Rater(s):</b>	Brian J. Miller	<b>Date:</b>	10/6/2020
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<b>1.0</b>	<b>1.0</b>
max 6 pts	subtotal

### Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☒ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

### Field ID:

W-2020-10-06-BJM-001

Delineated acres:	0.17
Total acres:	0.17

<b>9.0</b>	<b>10.0</b>
max 14 pts.	subtotal

### Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☒ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☒ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

<b>19.5</b>	<b>29.5</b>
max 30 pts.	subtotal

### Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/intermittent surface water (3)
- ☒ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☒ Recovered (7)
- ☐ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☒ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☒ Part of wetland/upland (e.g. forest), complex (1)
- ☒ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☒ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- |   |   |
|---|---|
| <input type="checkbox"/> ditch            | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile             | <input checked="" type="checkbox"/> filling/grading   |
| <input type="checkbox"/> dike             | <input checked="" type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir             | <input type="checkbox"/> dredging                     |
| <input type="checkbox"/> stormwater input | <input type="checkbox"/> Other:                       |

<b>10.0</b>	<b>39.5</b>
max 20 pts.	subtotal

### Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☒ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- |  |   |
|--|---|
| <input type="checkbox"/> mowing                      | <input checked="" type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing                     | <input type="checkbox"/> herbaceous/aquatic bed removal   |
| <input checked="" type="checkbox"/> clearcutting     | <input checked="" type="checkbox"/> sedimentation         |
| <input type="checkbox"/> selective cutting           | <input type="checkbox"/> dredging                         |
| <input type="checkbox"/> woody debris removal        | <input type="checkbox"/> farming                          |
| <input checked="" type="checkbox"/> toxic pollutants | <input type="checkbox"/> nutrient enrichment              |

<b>39.5</b>
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID: Wetland RLP-29a/b

Site: FE Lincoln Park-Riverbend Rater(s): Brian J. Miller Date: 10/6/2020

39.5

subtotal this page

Field ID:

W-2020-10-06-BJM-001

0.0 39.5

max 10 pts.

subtotal

### Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)  
☐ Fen (10)  
☐ Old growth forest (10)  
☐ Mature forested wetland (5)  
☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)  
☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)  
☐ Lake Plain Sand Prairies (Oak Openings) (10)  
☐ Relict Wet Prairies (10)  
☐ Known occurrence state/federal threatened or endangered species (10)  
☐ Significant migratory songbird/water fowl habitat or usage (10)  
☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

4.0 43.5

max 20pts.

subtotal

### Metric 6. Plant communities, interspersions, microtopography.

#### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed  
☒ 1 Emergent  
☒ 1 Shrub  
☐ Forest  
☐ Mudflats  
☐ Open water  
☐ Other

#### 6b. horizontal (plan view) interspersions.

Select only one.

- ☐ High (5)  
☐ Moderately high(4)  
☐ Moderate (3)  
☒ Moderately low (2)  
☐ Low (1)  
☐ None (0)

#### 6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)  
☐ Moderate 25-75% cover (-3)  
☒ Sparse 5-25% cover (-1)  
☐ Nearly absent <5% cover (0)  
☐ Absent (1)

#### 6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ 0 Vegetated hummocks/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, moderate although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

#### Mudflat and Open Water Class Quality

- 0 Absent <0.1ha (0.247 acres)  
1 Low 0.1 to <1ha (0.247 to 2.47 acres)  
2 Moderate 1 to <4ha (2.47 to 9.88 acres)  
3 High 4ha (9.88 acres) or more

#### Microtopography Cover Scale

- 0 Absent  
1 Present very small amounts or if more common of marginal quality  
2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality  
3 Present in moderate or greater amounts and of highest quality

43.5 TOTAL (Max 100 pts)

Modified 2 Category

<b>Wetland ID:</b>	<b>Wetland RLP-29a/b</b>
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### ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1. Critical Habitat	YES	<b>*NO</b>	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	<b>*NO</b>	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	<b>*NO</b>	If yes, Category 3.
	Question 4. Significant bird habitat	YES	<b>*NO</b>	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	<b>*NO</b>	If yes, Category 1.
	Question 6. Bogs	YES	<b>*NO</b>	If yes, Category 3.
	Question 7. Fens	YES	<b>*NO</b>	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	<b>*NO</b>	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	<b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	<b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	<b>*NO</b>	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	<b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	<b>*NO</b>	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	<b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	<b>1</b>		
	Metric 2. Buffers and surrounding land use	<b>9</b>		
	Metric 3. Hydrology	<b>19.5</b>		
	Metric 4. Habitat	<b>10</b>		
	Metric 5. Special Wetland Communities	<b>0</b>		
	Metric 6. Plant communities, interspersions, microtopography	<b>4</b>		
	TOTAL SCORE	<b>43.5</b>		Category based on score breakpoints

**Complete Wetland Categorization Worksheet.**



<b>Wetland ID:</b>	<b>Wetland RLP-29a/b</b>
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## 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	<b>*NO</b>	Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<b>*NO</b>	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	<b>*NO</b>	Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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	<b>*NO</b>	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?	<b>*YES</b> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<b>*NO</b> 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	<b>*Category 2</b>	Category 3
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**End of Ohio Rapid Assessment Method for Wetlands.**

<b>Wetland ID:</b>	<b>Wetland RLP-30</b>
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<b>Site:</b>	FE Lincoln Park-Riverbend	<b>Rater(s):</b>	Brian J. Miller	<b>Date:</b>	10/6/2020
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<b>0.0</b>	<b>0.0</b>
max 6 pts	subtotal

### Metric 1. Wetland Area (size).

- Select one size class and assign score.
- ☐ >50 acres (>20.2ha) (6 pts)
  - ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
  - ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
  - ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
  - ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
  - ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
  - ☒ <0.1 acres (0.04ha) (0 pts)

### Field ID:

W-2020-10-06-BJM-002

Delineated acres:	0.04
Total acres:	0.04

<b>9.0</b>	<b>9.0</b>
max 14 pts.	subtotal

### Metric 2. Upland buffers and surrounding land use.

#### 2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☒ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

#### 2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☒ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

<b>15.0</b>	<b>24.0</b>
max 30 pts.	subtotal

### Metric 3. Hydrology.

#### 3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/intermittent surface water (3)
- ☒ Perennial surface water (lake or stream) (5)

#### 3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

#### 3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

#### 3b. Connectivity. Score all that apply.

- ☒ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☒ Part of wetland/upland (e.g. forest), complex (1)
- ☒ Part of riparian or upland corridor (1)

#### 3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

#### Check all disturbances observed

- |   |   |
|---|---|
| <input type="checkbox"/> ditch            | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile             | <input checked="" type="checkbox"/> filling/grading   |
| <input type="checkbox"/> dike             | <input checked="" type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir             | <input type="checkbox"/> dredging                     |
| <input type="checkbox"/> stormwater input | <input type="checkbox"/> Other:                       |

<b>6.0</b>	<b>30.0</b>
max 20 pts.	subtotal

### Metric 4. Habitat Alteration and Development.

#### 4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

#### 4b. Habitat development. Select one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☒ Poor (1)

#### 4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

#### Check all disturbances observed

- |  |   |
|--|---|
| <input type="checkbox"/> mowing                      | <input checked="" type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing                     | <input type="checkbox"/> herbaceous/aquatic bed removal   |
| <input checked="" type="checkbox"/> clearcutting     | <input checked="" type="checkbox"/> sedimentation         |
| <input type="checkbox"/> selective cutting           | <input type="checkbox"/> dredging                         |
| <input type="checkbox"/> woody debris removal        | <input type="checkbox"/> farming                          |
| <input checked="" type="checkbox"/> toxic pollutants | <input type="checkbox"/> nutrient enrichment              |

<b>30.0</b>
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

<b>Wetland ID:</b>	<b>Wetland RLP-30</b>
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<b>Site:</b>	FE Lincoln Park-Riverbend	<b>Rater(s):</b>	Brian J. Miller	<b>Date:</b>	10/6/2020
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<b>30.0</b>
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subtotal this page

**Field ID:**

W-2020-10-06-BJM-002

<b>0.0</b>	<b>30.0</b>
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max 10 pts.

subtotal

### Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

<b>1.0</b>	<b>31.0</b>
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max 20pts.

subtotal

### Metric 6. Plant communities, interspersions, microtopography.

#### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ 1 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

#### 6b. horizontal (plan view) interspersions.

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 hummocks/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, moderate although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

#### Mudflat and Open Water Class Quality

- |   |   |
|---|---|
| 0 | Absent <0.1ha (0.247 acres)             |
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres)   |
| 2 | Moderate 1 to <4ha (2.47 to 9.88 acres) |
| 3 | High 4ha (9.88 acres) or more           |

#### Microtopography Cover Scale

- |   |  |
|---|--|
| 0 | Absent   |
| 1 | Present very small amounts or if more common of marginal quality                               |
| 2 | Present in moderate amounts, but not of highest quality or in small amounts of highest quality |
| 3 | Present in moderate or greater amounts and of highest quality                                  |

<b>31.0</b>	<b>TOTAL (Max 100 pts)</b>
<b>1 or 2 Gray Zone</b>	<b>Category</b>



<b>Wetland ID:</b>	<b>Wetland RLP-30</b>
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### ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1. Critical Habitat	YES	<b>*NO</b>	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	<b>*NO</b>	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	<b>*NO</b>	If yes, Category 3.
	Question 4. Significant bird habitat	YES	<b>*NO</b>	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	<b>*NO</b>	If yes, Category 1.
	Question 6. Bogs	YES	<b>*NO</b>	If yes, Category 3.
	Question 7. Fens	YES	<b>*NO</b>	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	<b>*NO</b>	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	<b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	<b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	<b>*NO</b>	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	<b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	<b>*NO</b>	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	<b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	<b>0</b>		
	Metric 2. Buffers and surrounding land use	<b>9</b>		
	Metric 3. Hydrology	<b>15</b>		
	Metric 4. Habitat	<b>6</b>		
	Metric 5. Special Wetland Communities	<b>0</b>		
	Metric 6. Plant communities, interspersions, microtopography	<b>1</b>		
	TOTAL SCORE	<b>31</b>		Category based on score breakpoints

**Complete Wetland Categorization Worksheet.**

<b>Wetland ID:</b>	<b>Wetland RLP-30</b>
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## 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	<b>*NO</b>	Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<b>*NO</b>	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	<b>*NO</b>	Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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	<b>*NO</b>	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?	<b>*YES</b> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<b>*NO</b> 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	<b>*Category 2</b>	Category 3
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**End of Ohio Rapid Assessment Method for Wetlands.**

<b>Wetland ID:</b>	<b>Wetland RLP-31</b>
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<b>Site:</b>	Lincoln Park Riverbend	<b>Rater(s):</b>	Brian J. Miller	<b>Date:</b>	9/8/2020
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<b>0.0</b>	<b>0.0</b>
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max 6 pts subtotal

### Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☒ <0.1 acres (0.04ha) (0 pts)

### Field ID:

W-2020-10-06-BJM-003

Delineated acres:	0.10
Total acres:	0.10

<b>9.0</b>	<b>9.0</b>
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max 14 pts subtotal

### Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☒ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☒ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

<b>15.0</b>	<b>24.0</b>
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max 30 pts subtotal

### Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/intermittent surface water (3)
- ☒ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☒ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☒ Part of wetland/upland (e.g. forest), complex (1)
- ☒ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- |   |   |
|---|---|
| <input type="checkbox"/> ditch            | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile             | <input checked="" type="checkbox"/> filling/grading   |
| <input type="checkbox"/> dike             | <input checked="" type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir             | <input type="checkbox"/> dredging                     |
| <input type="checkbox"/> stormwater input | <input type="checkbox"/> Other:                       |

<b>6.0</b>	<b>30.0</b>
------------	-------------

max 20 pts subtotal

### Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☒ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- |  |   |
|--|---|
| <input type="checkbox"/> mowing                      | <input checked="" type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing                     | <input type="checkbox"/> herbaceous/aquatic bed removal   |
| <input checked="" type="checkbox"/> clearcutting     | <input checked="" type="checkbox"/> sedimentation         |
| <input type="checkbox"/> selective cutting           | <input type="checkbox"/> dredging                         |
| <input type="checkbox"/> woody debris removal        | <input type="checkbox"/> farming                          |
| <input checked="" type="checkbox"/> toxic pollutants | <input type="checkbox"/> nutrient enrichment              |

<b>30.0</b>
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subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating



Wetland ID: Wetland RLP-31

Site: Lincoln Park Riverbend Rater(s): Brian J. Miller Date: 9/8/2020

30.0

subtotal this page

Field ID:

W-2020-10-06-BJM-003

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 Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

1.0 31.0

max 20pts.

subtotal

### Metric 6. Plant communities, interspersions, microtopography.

#### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ 1 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

#### 6b. horizontal (plan view) interspersions.

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 hummocks/tussocks
- ☐ 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, moderate although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

#### Mudflat and Open Water Class Quality

- 0 Absent <0.1ha (0.247 acres)
- 1 Low 0.1 to <1ha (0.247 to 2.47 acres)
- 2 Moderate 1 to <4ha (2.47 to 9.88 acres)
- 3 High 4ha (9.88 acres) or more

#### Microtopography Cover Scale

- 0 Absent
- 1 Present very small amounts or if more common of marginal quality
- 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality
- 3 Present in moderate or greater amounts and of highest quality

31.0 TOTAL (Max 100 pts)

1 or 2 Gray Zone Category

<b>Wetland ID:</b>	<b>Wetland RLP-31</b>
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### ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1. Critical Habitat	YES	<b>*NO</b>	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	<b>*NO</b>	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	<b>*NO</b>	If yes, Category 3.
	Question 4. Significant bird habitat	YES	<b>*NO</b>	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	<b>*NO</b>	If yes, Category 1.
	Question 6. Bogs	YES	<b>*NO</b>	If yes, Category 3.
	Question 7. Fens	YES	<b>*NO</b>	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	<b>*NO</b>	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	<b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	<b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	<b>*NO</b>	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	<b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	<b>*NO</b>	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	<b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	<b>0</b>		
	Metric 2. Buffers and surrounding land use	<b>9</b>		
	Metric 3. Hydrology	<b>15</b>		
	Metric 4. Habitat	<b>6</b>		
	Metric 5. Special Wetland Communities	<b>0</b>		
	Metric 6. Plant communities, interspersions, microtopography	<b>1</b>		
	TOTAL SCORE	<b>31</b>		Category based on score breakpoints

**Complete Wetland Categorization Worksheet.**

<b>Wetland ID:</b>	<b>Wetland RLP-31</b>
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## 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	<b>*NO</b>	Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<b>*NO</b>	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	<b>*NO</b>	Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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	<b>*NO</b>	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?	<b>*YES</b> 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 <i>not</i> 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	<b>*NO</b> 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	<b>*Category 2</b>	Category 3
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**End of Ohio Rapid Assessment Method for Wetlands.**



<b>Wetland ID:</b>	<b>Wetland RLP-32</b>
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<b>Site:</b>	Lincoln Park Riverbend	<b>Rater(s):</b>	Brian J. Miller	<b>Date:</b>	10/6/2020
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<b>0.0</b>	<b>0.0</b>
------------	------------

max 6 pts subtotal

### Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☒ <0.1 acres (0.04ha) (0 pts)

### Field ID:

W-2020-10-06-BJM-004

Delineated acres:	0.08
Total acres:	0.08

<b>5.0</b>	<b>5.0</b>
------------	------------

max 14 pts subtotal

### Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☒ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☒ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

<b>16.0</b>	<b>21.0</b>
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max 30 pts subtotal

### Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/intermittent surface water (3)
- ☒ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☒ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☒ Part of wetland/upland (e.g. forest), complex (1)
- ☒ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☒ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- |   |   |
|---|---|
| <input type="checkbox"/> ditch            | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile             | <input checked="" type="checkbox"/> filling/grading   |
| <input type="checkbox"/> dike             | <input checked="" type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir             | <input type="checkbox"/> dredging                     |
| <input type="checkbox"/> stormwater input | <input type="checkbox"/> Other:                       |

<b>6.0</b>	<b>27.0</b>
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max 20 pts subtotal

### Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☒ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- |  |   |
|--|---|
| <input type="checkbox"/> mowing                      | <input checked="" type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing                     | <input type="checkbox"/> herbaceous/aquatic bed removal   |
| <input checked="" type="checkbox"/> clearcutting     | <input checked="" type="checkbox"/> sedimentation         |
| <input type="checkbox"/> selective cutting           | <input type="checkbox"/> dredging                         |
| <input type="checkbox"/> woody debris removal        | <input type="checkbox"/> farming                          |
| <input checked="" type="checkbox"/> toxic pollutants | <input type="checkbox"/> nutrient enrichment              |

<b>27.0</b>
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subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

<b>Wetland ID:</b>	<b>Wetland RLP-32</b>
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<b>Site:</b>	Lincoln Park Riverbend	<b>Rater(s):</b>	Brian J. Miller	<b>Date:</b>	10/6/2020
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<b>27.0</b>
subtotal this page

<b>Field ID:</b>
W-2020-10-06-BJM-004

<b>0.0</b>	<b>27.0</b>
max 10 pts.	subtotal

### Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

<b>5.0</b>	<b>32.0</b>
max 20pts.	subtotal

### Metric 6. Plant communities, interspersions, 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) interspersions.

Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☒ Moderately low (2)
- ☐ Low (1)
- ☐ None (0)

#### 6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

#### 6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ 0 Vegetated hummocks/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 generally w/o presence of rare threatened or endangered spp to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

#### Mudflat and Open Water Class Quality

- |   |   |
|---|---|
| 0 | Absent <0.1ha (0.247 acres)             |
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres)   |
| 2 | Moderate 1 to <4ha (2.47 to 9.88 acres) |
| 3 | High 4ha (9.88 acres) or more           |

#### Microtopography Cover Scale

- |   |  |
|---|--|
| 0 | Absent   |
| 1 | Present very small amounts or if more common of marginal quality                               |
| 2 | Present in moderate amounts, but not of highest quality or in small amounts of highest quality |
| 3 | Present in moderate or greater amounts and of highest quality                                  |

<b>32.0</b>	<b>TOTAL (Max 100 pts)</b>
<b>1 or 2 Gray Zone</b>	<b>Category</b>

<b>Wetland ID:</b>	<b>Wetland RLP-32</b>
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### ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1. Critical Habitat	YES	<b>*NO</b>	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	<b>*NO</b>	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	<b>*NO</b>	If yes, Category 3.
	Question 4. Significant bird habitat	YES	<b>*NO</b>	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	<b>*NO</b>	If yes, Category 1.
	Question 6. Bogs	YES	<b>*NO</b>	If yes, Category 3.
	Question 7. Fens	YES	<b>*NO</b>	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	<b>*NO</b>	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	<b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	<b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	<b>*NO</b>	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	<b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	<b>*NO</b>	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	<b>*NO</b>	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	<b>0</b>		
	Metric 2. Buffers and surrounding land use	<b>5</b>		
	Metric 3. Hydrology	<b>16</b>		
	Metric 4. Habitat	<b>6</b>		
	Metric 5. Special Wetland Communities	<b>0</b>		
	Metric 6. Plant communities, interspersions, microtopography	<b>5</b>		
	TOTAL SCORE	<b>32</b>		Category based on score breakpoints

**Complete Wetland Categorization Worksheet.**



<b>Wetland ID:</b>	<b>Wetland RLP-32</b>
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## 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	<b>*NO</b>	Is quantitative rating score <i>less</i> than the Category 2 scoring threshold ( <i>excluding</i> 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	<b>*NO</b>	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	<b>*NO</b>	Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold ( <i>including</i> 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	<b>*NO</b>	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?	<b>*YES</b> 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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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	<b>*NO</b> 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	<b>*Category 2</b>	Category 3
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**End of Ohio Rapid Assessment Method for Wetlands.**

**APPENDIX C**

**OEPA QHEI AND HHEI STREAM FORMS**



# Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

**QHEI Score:** 83.50
**Stream & Location:** FE Lincoln Park-Riverbend 138kV Transmission Line

**RM:** 19.5 **Date:** 1 / 6 / 20

**Line - Mahoning River**
**Scorer's Full Name & Affiliation:** Audrey Hanner, AECOM

**River Code:** 18- 001 - 000 **STORET #:**
**Lat./ Long.:** 41.1038 / 80.6597

**Office verified location** ☐
**1] SUBSTRATE** Check **ONLY Two** substrate **TYPE BOXES**; estimate % or note every type present

Check ONE (Or 2 &amp; average)

BEST TYPES		OTHER TYPES		ORIGIN		QUALITY	
<input type="checkbox"/> BLDR /SLABS [10]	<input type="checkbox"/> POOL RIFFLE	<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/> POOL RIFFLE	<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> SILT	<input type="checkbox"/> HEAVY [-2]	<b>Substrate</b>  Maximum 20
<input type="checkbox"/> BOULDER [9]		<input type="checkbox"/> DETRITUS [3]		<input type="checkbox"/> TILLS [1]		<input type="checkbox"/> MODERATE [-1]	
<input type="checkbox"/> COBBLE [8]		<input type="checkbox"/> MUCK [2]		<input type="checkbox"/> WETLANDS [0]		<input type="checkbox"/> NORMAL [0]	
<input type="checkbox"/> GRAVEL [7]		<input type="checkbox"/> SILT [2]		<input type="checkbox"/> HARDPAN [0]		<input type="checkbox"/> FREE [1]	
<input type="checkbox"/> SAND [6]		<input type="checkbox"/> ARTIFICIAL [0]		<input type="checkbox"/> SANDSTONE [0]		<input type="checkbox"/> EXTENSIVE [-2]	
<input type="checkbox"/> BEDROCK [5]				<input type="checkbox"/> RIP/RAP [0]		<input type="checkbox"/> MODERATE [-1]	
(Score natural substrates; ignore sludge from point-sources)				<input type="checkbox"/> LACUSTURINE [0]	<input type="checkbox"/> EMBEDDEDNESS	<input type="checkbox"/> NORMAL [0]	
				<input type="checkbox"/> SHALE [-1]		<input type="checkbox"/> NONE [1]	
				<input type="checkbox"/> COAL FINES [-2]			

**NUMBER OF BEST TYPES:** ☐ 4 or more [2] ☐ 3 or less [0]

**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.

**AMOUNT**

Check ONE (Or 2 &amp; average)

<input checked="" type="checkbox"/> 1 UNDERCUT BANKS [1]	<input type="checkbox"/> 0 POOLS > 70cm [2]	<input type="checkbox"/> 1 OXBOWS, BACKWATERS [1]	<input type="checkbox"/> EXTENSIVE >75% [11]
<input checked="" type="checkbox"/> 3 OVERHANGING VEGETATION [1]	<input type="checkbox"/> 0 ROOTWADS [1]	<input type="checkbox"/> 0 AQUATIC MACROPHYTES [1]	<input checked="" type="checkbox"/> MODERATE 25-75% [7]
<input type="checkbox"/> 0 SHALLOWS (IN SLOW WATER) [1]	<input type="checkbox"/> 1 BOULDERS [1]	<input type="checkbox"/> 1 LOGS OR WOODY DEBRIS [1]	<input checked="" type="checkbox"/> SPARSE 5-<25% [3]
<input checked="" type="checkbox"/> 3 ROOTMATS [1]			<input type="checkbox"/> NEARLY ABSENT <5% [1]

**Comments**
**Cover**  
Maximum 20

**3] CHANNEL MORPHOLOGY** Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]
<input type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input checked="" type="checkbox"/> MODERATE [2]
<input checked="" type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input checked="" type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input checked="" type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

**Comments**
**Channel**  
Maximum 20

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)

EROSION		RIPARIAN WIDTH		FLOOD PLAIN QUALITY		CONSERVATION TILLAGE	
<input checked="" type="checkbox"/> NONE / LITTLE [3]	<input type="checkbox"/> WIDE > 50m [4]	<input checked="" type="checkbox"/> FOREST, SWAMP [3]	<input type="checkbox"/> CONSERVATION TILLAGE [1]				
<input type="checkbox"/> MODERATE [2]	<input checked="" type="checkbox"/> MODERATE 10-50m [3]	<input checked="" type="checkbox"/> SHRUB OR OLD FIELD [2]	<input checked="" type="checkbox"/> URBAN OR INDUSTRIAL [0]				
<input type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> MINING / CONSTRUCTION [0]				
	<input type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> FENCED PASTURE [1]					
	<input type="checkbox"/> NONE [0]	<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]					

**Comments**
**Riparian**  
Maximum 10

Floodplain predominantly contains successional/mature forested and shrub habitat.

**5] POOL / GLIDE AND RIFFLE / RUN QUALITY**

MAXIMUM DEPTH	CHANNEL WIDTH	CURRENT VELOCITY
Check ONE (ONLY!)	Check ONE (Or 2 & average)	Check ALL that apply
<input checked="" type="checkbox"/> > 1m [6]	<input checked="" type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]
<input type="checkbox"/> 0.7-<1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> SLOW [1]
<input type="checkbox"/> 0.4-<0.7m [2]	<input type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> VERY FAST [1]
<input type="checkbox"/> 0.2-<0.4m [1]		<input type="checkbox"/> INTERSTITIAL [-1]
<input type="checkbox"/> < 0.2m [0]		<input checked="" type="checkbox"/> FAST [1]
		<input type="checkbox"/> INTERMITTENT [-2]
		<input checked="" type="checkbox"/> MODERATE [1]
		<input type="checkbox"/> EDDIES [1]

**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 &amp; average).

☒ NO RIFFLE [metric=0]

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
<input type="checkbox"/> BEST AREAS > 10cm [2]	<input checked="" type="checkbox"/> MAXIMUM > 50cm [2]	<input type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]
<input type="checkbox"/> BEST AREAS 5-10cm [1]	<input type="checkbox"/> MAXIMUM < 50cm [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]
			<input type="checkbox"/> EXTENSIVE [-1]

**Comments**
**Riffle / Run**  
Maximum 8

Run substrates not assessed due to inaccessibility and visual obstruction. No riffles observed within 200 ft. reach

<b>6] GRADIENT</b> ( 5.00 ft/mi)	<input type="checkbox"/> VERY LOW - LOW [2-4]
<b>DRAINAGE AREA</b> ( 980.00 mi <sup>2</sup> )	<input checked="" type="checkbox"/> MODERATE [6-10]
	<input type="checkbox"/> HIGH - VERY HIGH [10-6]

%POOL: 5.00	%GLIDE: 90.00
%RUN: 5.00	%RIFFLE: 0.00

**Gradient**  
Maximum 10



# AJ SAMPLED REACH

Check ALL that apply

METHOD	STAGE
<input type="checkbox"/> BOAT	<input type="checkbox"/> HIGH
<input type="checkbox"/> WADE	<input type="checkbox"/> UP
<input type="checkbox"/> L. LINE	<input type="checkbox"/> NORMAL
<input checked="" type="checkbox"/> OTHER	<input type="checkbox"/> LOW
	<input type="checkbox"/> DRY

DISTANCE	CLARITY
<input type="checkbox"/> 0.5 Km	1st --sample pass-- 2nd
<input checked="" type="checkbox"/> 0.2 Km	<input type="checkbox"/> < 20 cm
<input type="checkbox"/> 0.15 Km	<input type="checkbox"/> 20-<40 cm
<input type="checkbox"/> 0.12 Km	<input type="checkbox"/> 40-70 cm
<input type="checkbox"/> OTHER	<input checked="" type="checkbox"/> > 70 cm/ CTB
	<input type="checkbox"/> SECCHI DEPTH

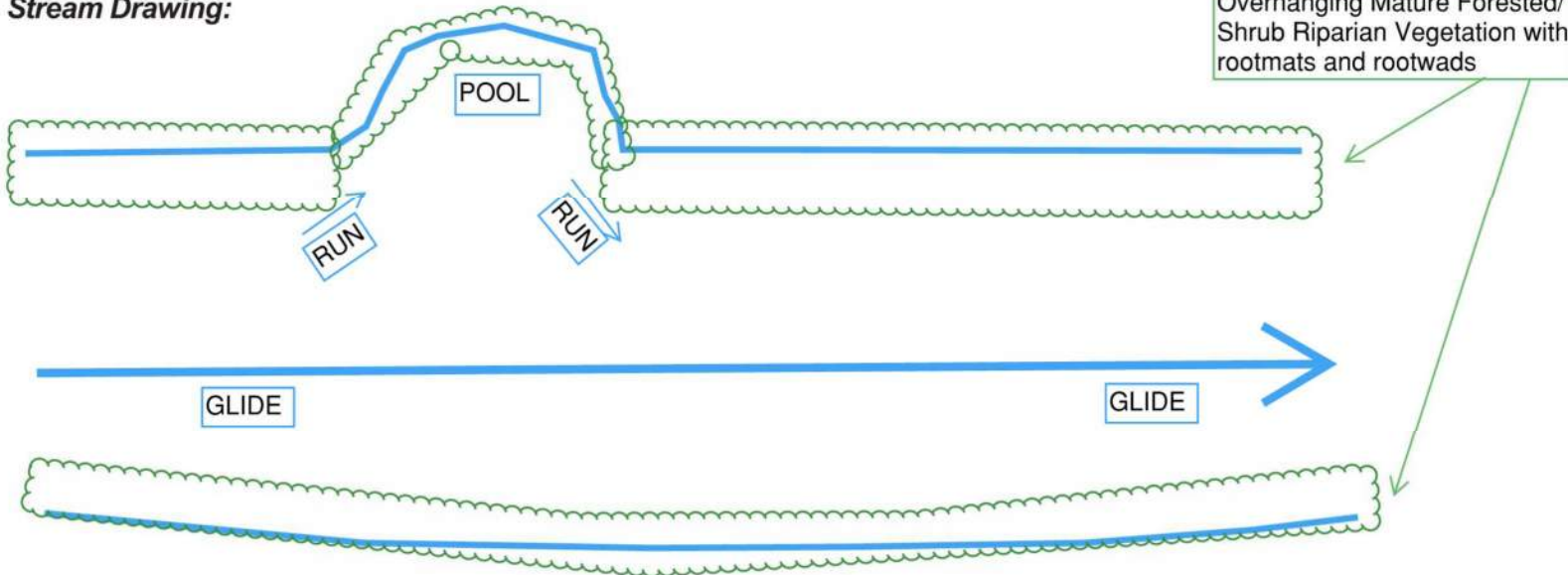
CANOPY
<input checked="" type="checkbox"/> > 85% - OPEN
<input type="checkbox"/> 55%-<85%
<input type="checkbox"/> 30%-<55%
<input type="checkbox"/> 10%-<30%
<input type="checkbox"/> <10% - CLOSED

Comment RE: Reach consistency/ Is reach typical of stream? 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.

BJ AESTHETICS	DJ MAINTENANCE	EJ ISSUES	FJ MEASUREMENTS
<input type="checkbox"/> NUISANCE ALGAE <input type="checkbox"/> INVASIVE MACROPHYTES <input checked="" type="checkbox"/> EXCESS TURBIDITY <input type="checkbox"/> DISCOLORATION <input type="checkbox"/> FOAM / SCUM <input type="checkbox"/> OIL SHEEN <input checked="" type="checkbox"/> TRASH / LITTER <input type="checkbox"/> NUISANCE ODOR <input type="checkbox"/> SLUDGE DEPOSITS <input type="checkbox"/> CSOs/SSOs/OUTFALLS	Circle some & COMMENT <input checked="" type="checkbox"/> 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	WWTP / CSO / NPDES / <input checked="" type="checkbox"/> INDUSTRY HARDENED / <input checked="" type="checkbox"/> URBAN / DIRT&GRIME CONTAMINATED / LANDFILL BMPs-CONSTRUCTION-SEDIMENT LOGGING / IRRIGATION / COOLING BANK / EROSION / SURFACE FALSE BANK / MANURE / LAGOON WASH H <sub>2</sub> O / TILE / H <sub>2</sub> O TABLE ACID / MINE / QUARRY / FLOW NATURAL / WETLAND / STAGNANT PARK / GOLF / LAWN / HOME ATMOSPHERE / DATA PAUCITY	x width NA x depth NA max. depth NA x bankfull width ~175 ft bankfull x depth NA W/D ratio bankfull max. depth floodprone x <sup>2</sup> width entrench. ratio Legacy Tree:

## Stream Drawing:





# 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

**Scorer's Full Name & Affiliation:** Audrey Hanner AECOM

**River Code:** \_ \_ \_ **STORET #:** \_ \_ \_ **Lat./ Long.:** 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 &amp; average)

BEST TYPES		OTHER TYPES		ORIGIN		QUALITY		Substrate <div style="border: 1px solid black; border-radius: 10px; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 5px;">4</div> Maximum 20
POOL	RIFFLE	POOL	RIFFLE					
<input type="checkbox"/> BLDR /SLABS [10]	<input type="checkbox"/>	<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/>	<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/>	<input type="checkbox"/> HEAVY [-2]	<input type="checkbox"/>	<div style="border: 1px solid black; border-radius: 10px; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 5px;">4</div> Maximum 20
<input type="checkbox"/> BOULDER [9]	<input type="checkbox"/>	<input type="checkbox"/> DETRITUS [3]	<input type="checkbox"/>	<input type="checkbox"/> TILLS [1]	<input type="checkbox"/>	<input type="checkbox"/> MODERATE [-1]	<input type="checkbox"/>	
<input type="checkbox"/> COBBLE [8]	<input type="checkbox"/>	<input type="checkbox"/> MUCK [2]	<input type="checkbox"/>	<input type="checkbox"/> WETLANDS [0]	<input type="checkbox"/>	<input type="checkbox"/> NORMAL [0]	<input type="checkbox"/>	
<input type="checkbox"/> GRAVEL [7]	<input type="checkbox"/>	<input checked="" type="checkbox"/> SILT [2]	<input type="checkbox"/> 30	<input type="checkbox"/> HARDPAN [0]	<input type="checkbox"/>	<input checked="" type="checkbox"/> FREE [1]	<input type="checkbox"/>	
<input type="checkbox"/> SAND [6]	<input type="checkbox"/>	<input type="checkbox"/> ARTIFICIAL [0]	<input type="checkbox"/> 70	<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/>	<input type="checkbox"/> EXTENSIVE [-2]	<input type="checkbox"/>	
<input type="checkbox"/> BEDROCK [5]	<input type="checkbox"/>	(Score natural substrates; ignore sludge from point-sources)		<input checked="" type="checkbox"/> RIP/RAP [0]	<input type="checkbox"/>	<input type="checkbox"/> MODERATE [-1]	<input type="checkbox"/>	
				<input type="checkbox"/> LACUSTURINE [0]	<input type="checkbox"/>	<input type="checkbox"/> NORMAL [0]	<input type="checkbox"/>	
				<input type="checkbox"/> SHALE [-1]	<input type="checkbox"/>	<input checked="" type="checkbox"/> NONE [1]	<input type="checkbox"/>	
				<input type="checkbox"/> COAL FINES [-2]	<input type="checkbox"/>			

**NUMBER OF BEST TYPES:** ☐ 4 or more [2] ☒ 3 or less [0]

**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.

**AMOUNT**

Check ONE (Or 2 &amp; average)

<input type="checkbox"/> UNDERCUT BANKS [1]	<input type="checkbox"/> POOLS > 70cm [2]	<input type="checkbox"/> OXBOWS, BACKWATERS [1]	<input type="checkbox"/> EXTENSIVE >75% [11]
<input type="checkbox"/> OVERHANGING VEGETATION [1]	<input type="checkbox"/> ROOTWADS [1]	<input type="checkbox"/> AQUATIC MACROPHYTES [1]	<input type="checkbox"/> MODERATE 25-75% [7]
<input type="checkbox"/> SHALLOWS (IN SLOW WATER) [1]	<input type="checkbox"/> BOULDERS [1]	<input type="checkbox"/> LOGS OR WOODY DEBRIS [1]	<input type="checkbox"/> SPARSE 5-<25% [3]
<input type="checkbox"/> ROOTMATS [1]			<input checked="" type="checkbox"/> NEARLY ABSENT <5% [1]

**Comments**
**Cover**  
Maximum 20 1
**3] CHANNEL MORPHOLOGY** Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]
<input type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input type="checkbox"/> MODERATE [2]
<input type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input checked="" type="checkbox"/> LOW [1]
<input checked="" type="checkbox"/> NONE [1]	<input checked="" type="checkbox"/> POOR [1]	<input checked="" type="checkbox"/> RECENT OR NO RECOVERY [1]	

**Comments**
**Channel**  
Maximum 20 4
**4] BANK EROSION AND RIPARIAN ZONE** Check ONE in each category for **EACH BANK** (Or 2 per bank & average)

EROSION		RIPARIAN WIDTH		FLOOD PLAIN QUALITY		CONSERVATION TILLAGE	
<input checked="" type="checkbox"/> NONE / LITTLE [3]	<input type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> FOREST, SWAMP [3]	<input type="checkbox"/> CONSERVATION TILLAGE [1]				
<input type="checkbox"/> MODERATE [2]	<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]	<input checked="" type="checkbox"/> URBAN OR INDUSTRIAL [0]				
<input type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> MINING / CONSTRUCTION [0]				
	<input type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> FENCED PASTURE [1]					
	<input checked="" type="checkbox"/> NONE [0]	<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]					

**Comments**

 Indicate predominant land use(s) past 100m riparian. **Riparian**  
Maximum 10 3
**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 &amp; average)

☐ POOL WIDTH > RIFFLE WIDTH [2]  
☒ POOL WIDTH = RIFFLE WIDTH [1]  
☐ POOL WIDTH < RIFFLE WIDTH [0]

**CURRENT VELOCITY**

Check ALL that apply

☐ TORRENTIAL [-1] ☐ SLOW [1]  
☐ VERY FAST [1] ☐ INTERSTITIAL [-1]  
☐ FAST [1] ☐ INTERMITTENT [-2]  
☒ MODERATE [1] ☐ EDDIES [1]

Indicate for reach - pools and riffles.

**Recreation Potential**
**Primary Contact**
**Secondary Contact**

(circle one and comment on back)

**Comments**
**Pool / Current**  
Maximum 12 4

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 &amp; 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]

**Comments**
**Riffle / Run**  
Maximum 8 0
**6] GRADIENT** ( 38.3 ft/mi) ☐ VERY LOW - LOW [2-4]  
**DRAINAGE AREA** ( 21.1 mi<sup>2</sup>) ☐ MODERATE [6-10]  
☒ HIGH - VERY HIGH [10-6]

**%POOL:** 0 **%GLIDE:** 0
**%RUN:** 100 **%RIFFLE:** 0
**Gradient**  
Maximum 10 6



**AJ SAMPLED REACH**

Check ALL that apply

**METHOD**

- ☐
- BOAT
- 
- ☐
- WADE
- 
- ☐
- L. LINE
- 
- ☐
- OTHER

**DISTANCE**

- ☐
- 0.5 Km
- 
- ☐
- 0.2 Km
- 
- ☐
- 0.15 Km
- 
- ☐
- 0.12 Km
- 
- ☐
- OTHER

200 feet

**CANOPY**

- ☐
- > 85%- OPEN
- 
- ☐
- 55%-<85%
- 
- ☐
- 30%-<55%
- 
- ☐
- 10%-<30%
- 
- ☐
- <10%- CLOSED

**STAGE**

1st -sample pass- 2nd

- ☐
- HIGH
- 
- ☐
- UP
- 
- ☐
- NORMAL
- 
- ☐
- LOW
- 
- ☐
- DRY

**CLARITY**

1st --sample pass-- 2nd

- ☐
- < 20 cm
- 
- ☐
- 20-<40 cm
- 
- ☐
- 40-70 cm
- 
- ☐
- > 70 cm/ CTB
- 
- ☐
- SECCHI DEPTH

1st \_\_\_\_\_ cm

2nd \_\_\_\_\_ cm

**CJ REC****BJ 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: ☐ >100ft/ ☐ >3ft**DJ MAINTENANCE**

- ☐
- 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

Circle some &amp; COMMENT

**EJ 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
- <sub>2</sub>
- O / TILE / H
- <sub>2</sub>
- O TABLE
- 
- ☐
- ACID / MINE / QUARRY / FLOW
- 
- ☐
- NATURAL / WETLAND / STAGNANT
- 
- ☐
- PARK / GOLF / LAWN / HOME
- 
- ☐
- ATMOSPHERE / DATA PAUCITY

**FJ 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 is  
channelizedaccess  
road

railroad

mahoning  
river

all pavement/gravel





## Primary Headwater Habitat Evaluation Form

25

HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION FE Lincoln Park-Riverbend 138kV Transmission Line

hh-aeh-20200108-01 SITE NUMBER NA RIVER BASIN Dry Run-Mahoning DRAINAGE AREA (mi<sup>2</sup>) 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 ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY  
 MODIFICATIONS: 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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> SILT [3 pt]	<input checked="" type="checkbox"/> 55%
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> BEDROCK [16 pt]	<input type="checkbox"/> 0%	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="checkbox"/> 20%
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input checked="" type="checkbox"/> 25%	<input type="checkbox"/> MUCK [0 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="checkbox"/> 0%

Total of Percentages of  
Bldr Slabs, Boulder, Cobble, Bedrock **0.00%**

(A)

Substrate Percentage  
Check **100%**

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **12**TOTAL NUMBER OF SUBSTRATE TYPES: **3**HHEI  
Metric  
PointsSubstrate  
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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input checked="" type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> 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):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 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		FLOODPLAIN QUALITY			
L	R	L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)			
Wide >10m		Mature Forest, Wetland		<input type="checkbox"/>	<input type="checkbox"/>
Moderate 5-10m		Immature Forest, Shrub or Old Field		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Narrow <5m		Residential, Park, New Field		<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Fenced Pasture		<input type="checkbox"/>	<input type="checkbox"/>
None				<input type="checkbox"/>	<input type="checkbox"/>

COMMENTS

**FLOW REGIME** (At Time of Evaluation) (Check ONLY one box):

<input checked="" type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS

**SINUOSITY** (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input checked="" type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >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, downstream 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:

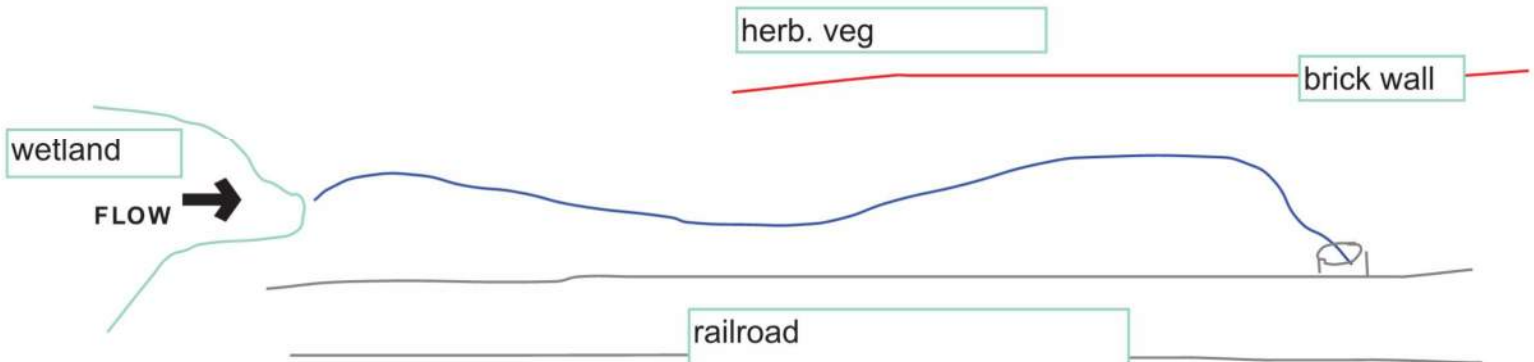
Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☒ Unstable ☐

**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







# Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score:

51

Stream &amp; Location: FE Lincoln Park-Riverbend 138kV Transmission Line

RM: N/A Date: 01/08/2020

qh-JBL-20200108-01

- DRY RUN

Scorers Full Name &amp; Affiliation: JTT, JBL / AECOM

River Code: N/A

STORET #: N/A

Lat./ Long.: 41.087213, -80.619971

Office verified location ☐

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 &amp; average)

BEST TYPES		OTHER TYPES		ORIGIN		QUALITY		Substrate 15 Maximum 20
POOL	RIFFLE	POOL	RIFFLE					
<input type="checkbox"/> BLDR /SLABS [10]	15	<input type="checkbox"/> HARDPAN [4]		<input checked="" type="checkbox"/> LIMESTONE [1]		<input type="checkbox"/> HEAVY [-2]		SILT EMBEDDEDNESS 15 Maximum 20
<input type="checkbox"/> BOULDER [9]		<input type="checkbox"/> DETRITUS [3]		<input checked="" type="checkbox"/> TILLS [1]		<input type="checkbox"/> MODERATE [-1]		
<input checked="" type="checkbox"/> COBBLE [8]	10 40	<input type="checkbox"/> MUCK [2]		<input type="checkbox"/> WETLANDS [0]		<input checked="" type="checkbox"/> NORMAL [0]		
<input checked="" type="checkbox"/> GRAVEL [7]	25 25	<input type="checkbox"/> SILT [2]	25	<input type="checkbox"/> HARDPAN [0]		<input type="checkbox"/> FREE [1]		
<input type="checkbox"/> SAND [6]	30 15	<input type="checkbox"/> ARTIFICIAL [0]		<input type="checkbox"/> SANDSTONE [0]		<input checked="" type="checkbox"/> EXTENSIVE [-2]		
<input type="checkbox"/> BEDROCK [5]	10 5			<input type="checkbox"/> RIP/RAP [0]		<input checked="" type="checkbox"/> MODERATE [-1]		
(Score natural substrates; ignore sludge from point-sources)				<input type="checkbox"/> LACUSTURINE [0]		<input type="checkbox"/> NORMAL [0]		
NUMBER OF BEST TYPES: <input checked="" type="checkbox"/> 4 or more [2] <input type="checkbox"/> 3 or less [0]				<input type="checkbox"/> SHALE [-1]		<input type="checkbox"/> NONE [1]		
Comments				<input type="checkbox"/> COAL FINES [-2]				

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.

AMOUNT

Check ONE (Or 2 &amp; average)

<input type="checkbox"/> UNDERCUT BANKS [1]	<input type="checkbox"/> POOLS > 70cm [2]	<input type="checkbox"/> OXBOWS, BACKWATERS [1]	<input type="checkbox"/> EXTENSIVE >75% [11]
<input type="1"/> OVERHANGING VEGETATION [1]	<input type="checkbox"/> ROOTWADS [1]	<input type="checkbox"/> AQUATIC MACROPHYTES [1]	<input type="checkbox"/> MODERATE 25-75% [7]
<input type="checkbox"/> SHALLOWS (IN SLOW WATER) [1]	<input type="checkbox"/> BOULDERS [1]	<input type="1"/> LOGS OR WOODY DEBRIS [1]	<input type="checkbox"/> SPARSE 5-<25% [3]
<input type="checkbox"/> ROOTMATS [1]			<input checked="" type="checkbox"/> NEARLY ABSENT <5% [1]
Comments			Cover Maximum 20 3

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 &amp; average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY	Channel Maximum 20 11
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]	
<input type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input checked="" type="checkbox"/> RECOVERED [4]	<input checked="" type="checkbox"/> MODERATE [2]	
<input checked="" type="checkbox"/> LOW [2]	<input checked="" type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]	
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]		
Comments				

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank &amp; average)

EROSION		RIPARIAN WIDTH		FLOOD PLAIN QUALITY		Riparian Maximum 10 8
L	R	L	R	L	R	
<input checked="" type="checkbox"/> NONE / LITTLE [3]	<input type="checkbox"/> WIDE > 50m [4]	<input checked="" type="checkbox"/> FOREST, SWAMP [3]	<input type="checkbox"/> CONSERVATION TILLAGE [1]			
<input type="checkbox"/> MODERATE [2]	<input checked="" type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]	<input type="checkbox"/> URBAN OR INDUSTRIAL [0]			
<input type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input checked="" type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> MINING / CONSTRUCTION [0]			
	<input type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> FENCED PASTURE [1]				
	<input type="checkbox"/> NONE [0]	<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]				
Comments				Indicate predominant land use(s) past 100m riparian.		

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH	CHANNEL WIDTH	CURRENT VELOCITY	Recreation Potential Primary Contact Secondary Contact (circle one and comment on back)
Check ONE (ONLY!)	Check ONE (Or 2 & average)	Check ALL that apply	
<input type="checkbox"/> > 1m [6]	<input checked="" type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]	Pool / Current Maximum 12 6
<input type="checkbox"/> 0.7-<1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input checked="" type="checkbox"/> SLOW [1]	
<input checked="" type="checkbox"/> 0.4-<0.7m [2]	<input type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [0]	<input type="checkbox"/> VERY FAST [1]	
<input type="checkbox"/> 0.2-<0.4m [1]		<input type="checkbox"/> FAST [1]	
<input type="checkbox"/> < 0.2m [0]		<input checked="" type="checkbox"/> MODERATE [1]	
Comments			Indicate for reach - pools and riffles.

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 &amp; average).

☐ NO RIFFLE [metric=0]

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS	Riffle / Run Maximum 8 4
<input type="checkbox"/> BEST AREAS > 10cm [2]	<input type="checkbox"/> MAXIMUM > 50cm [2]	<input checked="" type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]	
<input checked="" type="checkbox"/> BEST AREAS 5-10cm [1]	<input checked="" type="checkbox"/> MAXIMUM < 50cm [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> LOW [1]	
<input type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input checked="" type="checkbox"/> MODERATE [0]	
Comments			<input type="checkbox"/> EXTENSIVE [-1]	

6] GRADIENT ( 34.4 ft/mi) ☐ VERY LOW - LOW [2-4] ☐ MODERATE [6-10] ☐ HIGH - VERY HIGH [10-6]DRAINAGE AREA ( 9.69 mi<sup>2</sup>)

%POOL: 30 %GLIDE: 0 %RUN: 40 %RIFFLE: 30

Gradient  
Maximum 10  
4



**AJ SAMPLED REACH**

Check ALL that apply

- METHOD**
- ☐ BOAT  
☐ WADE  
☐ L. LINE  
☒ OTHER
- DISTANCE**
- ☐ 0.5 Km  
☐ 0.2 Km  
☐ 0.15 Km  
☐ 0.12 Km  
☒ OTHER
- 200 feet

**STAGE**

1st -sample pass- 2nd

- ☐ HIGH  
☐ UP  
☒ NORMAL  
☐ LOW  
☐ DRY

**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 \_\_\_\_\_ cm  
2nd \_\_\_\_\_ cm

**CJ REC****BJ 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: ☐ >100ft/ ☐ >3ft

**DJ MAINTENANCE**

- 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

Circle some &amp; COMMENT

**EJ 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<sub>2</sub>O / TILE / H<sub>2</sub>O TABLE  
ACID / MINE / QUARRY / FLOW  
NATURAL / WETLAND / STAGNANT  
~~PARK~~ / GOLF / LAWN / HOME  
ATMOSPHERE / DATA PAUCITY

**FJ MEASUREMENTS**

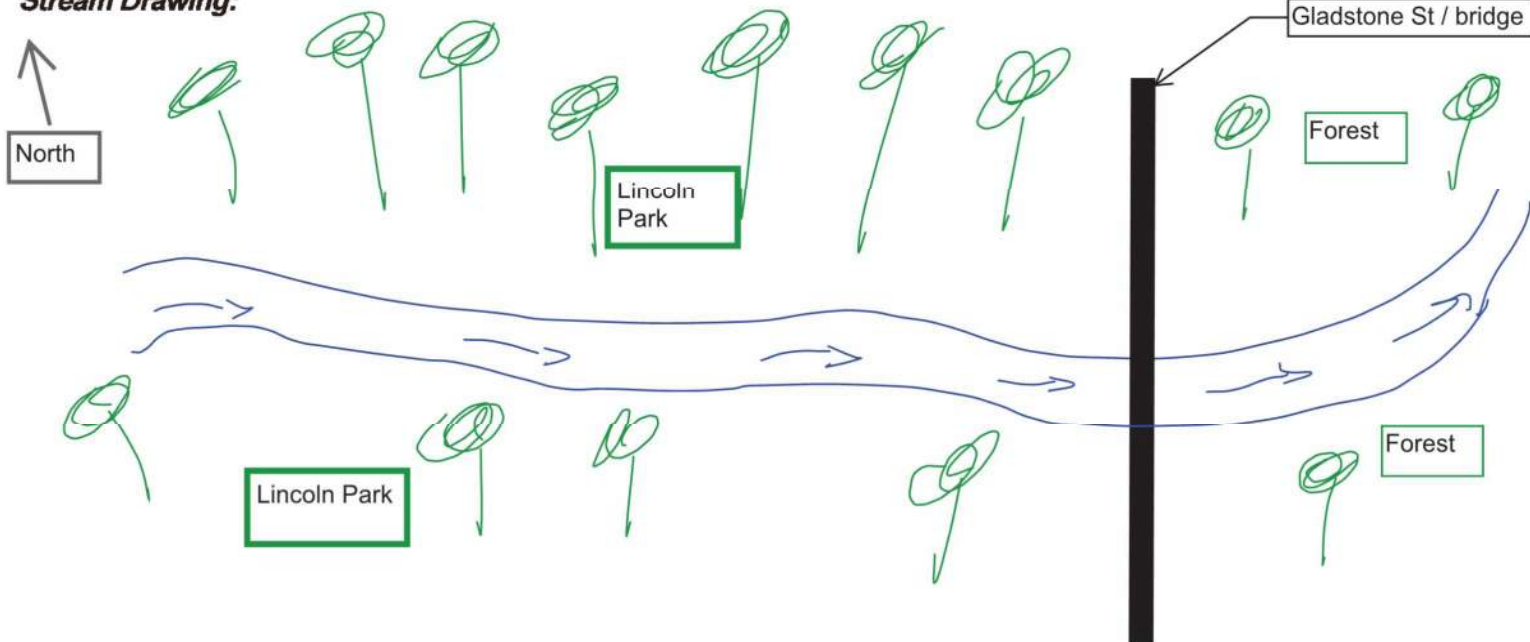
- $\bar{x}$  width  
 $\bar{x}$  depth  
max. depth 20 in  
 $\bar{x}$  bankfull width 10m  
bankfull  $\bar{x}$  depth  
W/D ratio  
bankfull max. depth  
floodprone  $x^2$  width  
entrench. ratio

Le Tree:

Comment RE: Reach consistency/ Is reach typical of stream?, 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

**Stream Drawing:**



## Primary Headwater Habitat Evaluation Form

39

HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION **FE Lincoln Park-Riverbend 138kV Transmission Line**

hh-jbl-20200108-02 SITE NUMBER **02** RIVER BASIN **Mahoning River** DRAINAGE AREA (mi<sup>2</sup>) **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 ☐ NONE / NATURAL CHANNEL ☒ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

MODIFICATIONS: **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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> SILT [3 pt]	<input type="checkbox"/> 25%
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="checkbox"/> 15%
<input type="checkbox"/> BEDROCK [16 pt]	<input type="checkbox"/> 0%	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="checkbox"/> 0%
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input checked="" type="checkbox"/> 30%	<input type="checkbox"/> MUCK [0 pts]	<input type="checkbox"/> 0%
<input checked="" type="checkbox"/> SAND (<2 mm) [6 pts]	<input checked="" type="checkbox"/> 30%	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="checkbox"/> 0%

Total of Percentages of  
Bldr Slabs, Boulder, Cobble, Bedrock **0.00%**

(A)

Substrate Percentage  
Check **100%**

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **15**TOTAL NUMBER OF SUBSTRATE TYPES: **4**HHEI  
Metric  
PointsSubstrate  
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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input checked="" type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS **Stream cuts through steep hill slope** 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):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input checked="" type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS **Stream cuts through steep hill slope** 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		FLOODPLAIN QUALITY			
L	R	L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)			
Wide >10m		Mature Forest, Wetland		Conservation Tillage	
<input type="checkbox"/> Moderate 5-10m		<input type="checkbox"/> Immature Forest, Shrub or Old Field		<input type="checkbox"/> Urban or Industrial	
<input type="checkbox"/> Narrow <5m		<input type="checkbox"/> Residential, Park, New Field		<input type="checkbox"/> Open Pasture, Row Crop	
<input checked="" type="checkbox"/> None		<input type="checkbox"/> Fenced Pasture		<input type="checkbox"/> Mining or Construction	

COMMENTS **Stream cuts through steep hill slope**

**FLOW REGIME** (At Time of Evaluation) (Check ONLY one box):

<input checked="" type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS **Stream cuts through steep hill slope**

**SINUOSITY** (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input checked="" type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

**STREAM GRADIENT ESTIMATE**

<input type="checkbox"/> Flat (0.5 ft/100 ft)	<input type="checkbox"/> Flat to Moderate	<input type="checkbox"/> Moderate (2 ft/100 ft)	<input checked="" type="checkbox"/> Moderate to Severe	<input type="checkbox"/> 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, downstream 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:

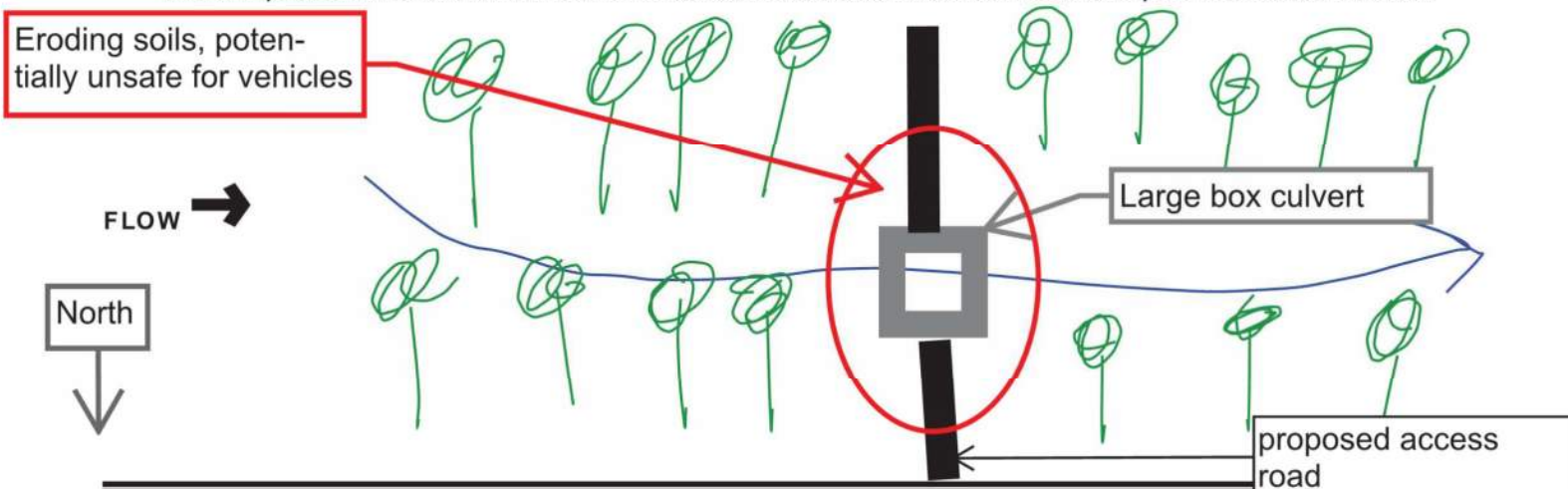
Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☐ Unstable ☒

**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







## Primary Headwater Habitat Evaluation Form

19

HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION FE Lincoln Park-Riverbend 138kV Transmission Line

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 ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY  
 MODIFICATIONS: 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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="checkbox"/> 0%	<input checked="" type="checkbox"/> SILT [3 pt]	<input checked="" type="checkbox"/> 70%
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="checkbox"/> 20%
<input type="checkbox"/> BEDROCK [16 pt]	<input type="checkbox"/> 0%	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="checkbox"/> 0%
<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="checkbox"/> 10%	<input type="checkbox"/> MUCK [0 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="checkbox"/> 0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 0.00%

(A)

Substrate Percentage Check 100%

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6

TOTAL NUMBER OF SUBSTRATE TYPES: 3

HHEI  
Metric  
PointsSubstrate  
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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input checked="" type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> 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):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 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		FLOODPLAIN QUALITY	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)	
Wide >10m		Mature Forest, Wetland	<input type="checkbox"/>
Moderate 5-10m		Immature Forest, Shrub or Old Field	<input type="checkbox"/>
Narrow <5m		Residential, Park, New Field	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Fenced Pasture	<input type="checkbox"/>
None			<input type="checkbox"/>

COMMENTS

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stream Flowing	Moist Channel, isolated pools, no flow (Intermittent)	Dry channel, no water (Ephemeral)
Subsurface flow with isolated pools (Interstitial)		

COMMENTS

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check <u>ONLY</u> one box):	1.0	2.0	3.0
None	1.5	2.5	>3
0.5			

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)**

<input checked="" type="checkbox"/> WWH Name: <u>Dry Run</u>	Distance from Evaluated Stream	<u>000 ft</u>
<input type="checkbox"/> CWH Name: <u></u>	Distance from Evaluated Stream	<u></u>
<input type="checkbox"/> EWH Name: <u></u>	Distance from Evaluated Stream	<u></u>

**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**

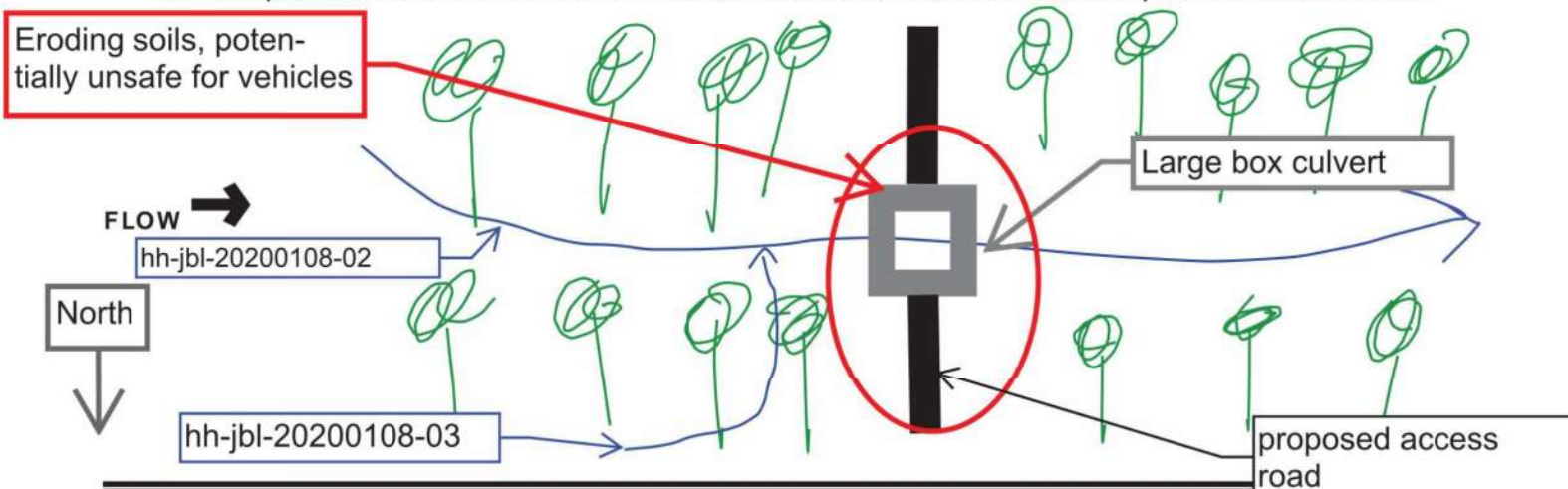
Base Flow Conditions? (Y/N): N Date of last precipitation: 01/05/20 Quantity: 0.16in  
Photograph Information: 3 photos, upstream, downstream and substrate  
Elevated Turbidity? (Y/N): N Canopy (% open): 85%  
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach 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







## Primary Headwater Habitat Evaluation Form

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HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION **FE Lincoln Park-Riverbend 138kV Transmission Line**

s-bl-20200108 SITE NUMBER **02** RIVER BASIN **Dry Run-Mahoning** DRAINAGE AREA (mi<sup>2</sup>) **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 ☐ NONE / NATURAL CHANNEL ☒ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

MODIFICATIONS: **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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> SILT [3 pt]	<input type="checkbox"/> 10%
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="checkbox"/> 15%
<input type="checkbox"/> BEDROCK [16 pt]	<input type="checkbox"/> 0%	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="checkbox"/> 5%
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="checkbox"/> 0%
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input checked="" type="checkbox"/> 40%	<input type="checkbox"/> MUCK [0 pts]	<input type="checkbox"/> 0%
<input checked="" type="checkbox"/> SAND (<2 mm) [6 pts]	<input checked="" type="checkbox"/> 30%	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="checkbox"/> 0%

Total of Percentages of  
Bldr Slabs, Boulder, Cobble, Bedrock **0.00%**

(A)

Substrate Percentage  
Check **100%**

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **15**TOTAL NUMBER OF SUBSTRATE TYPES: **5**HHEI  
Metric  
PointsSubstrate  
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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input checked="" type="checkbox"/> 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):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 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		FLOODPLAIN QUALITY			
L	R	L	R	L	R
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)			
Wide >10m		Mature Forest, Wetland		Conservation Tillage	
<input type="checkbox"/> Moderate 5-10m		<input checked="" type="checkbox"/> Immature Forest, Shrub or Old Field		<input type="checkbox"/> Urban or Industrial	
<input type="checkbox"/> Narrow <5m		<input type="checkbox"/> Residential, Park, New Field		<input type="checkbox"/> Open Pasture, Row Crop	
<input type="checkbox"/> None		<input type="checkbox"/> Fenced Pasture		<input type="checkbox"/> Mining or Construction	

COMMENTS **scrubby woods all around, within old roadway bridge crossing**FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input checked="" type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS **ephemeral, dry channel**SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input type="checkbox"/> None	<input checked="" type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >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)

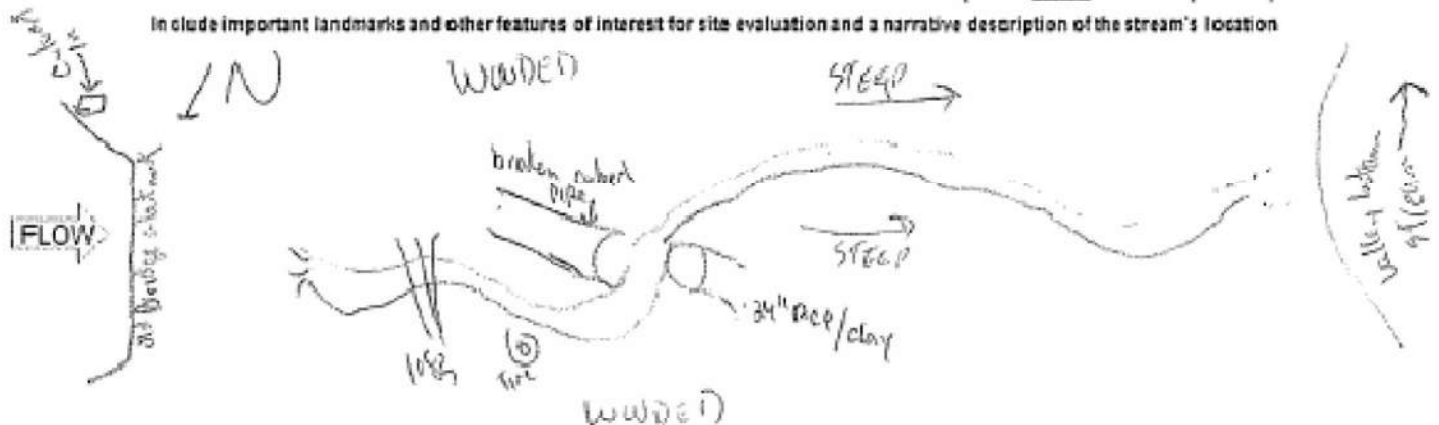


**ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):**QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score  (If Yes, Attach Completed QHEI Form)**DOWNSTREAM DESIGNATED USE(S)**

<input checked="" type="checkbox"/> WWH Name: <b>Dry Run</b>	Distance from Evaluated Stream	<b>0.04</b>
<input type="checkbox"/> CWH Name: <input type="text"/>	Distance from Evaluated Stream	<input type="text"/>
<input type="checkbox"/> EWH Name: <input type="text"/>	Distance from Evaluated Stream	<input type="text"/>

**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-downstream 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





## Primary Headwater Habitat Evaluation Form

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HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION **FE Lincoln Park-Riverbend 138kV Transmission Line**hh-jbl-20200108-01 SITE NUMBER **01** RIVER BASIN **Mahoning River** DRAINAGE AREA (mi<sup>2</sup>) **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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="checkbox"/> 0%	<input checked="" type="checkbox"/> SILT [3 pt]	<input type="checkbox"/> 40%
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="checkbox"/> 1%	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="checkbox"/> 9%
<input type="checkbox"/> BEDROCK [16 pt]	<input type="checkbox"/> 0%	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="checkbox"/> 0%
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="checkbox"/> 30%	<input type="checkbox"/> MUCK [0 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="checkbox"/> 20%	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="checkbox"/> 0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **1.00%**

(A)

Substrate Percentage Check **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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input checked="" type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> 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):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 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		FLOODPLAIN QUALITY			
L	R	L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)		Conservation Tillage	
Wide >10m		Mature Forest, Wetland		Urban or Industrial	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Moderate 5-10m		Immature Forest, Shrub or Old Field		Open Pasture, Row Crop	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Narrow <5m		Residential, Park, New Field		Mining or Construction	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
None		Fenced Pasture			

COMMENTS **Stream cuts through steep hillslope**FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input checked="" type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input checked="" type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >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)**

<input checked="" type="checkbox"/> WWH Name: <u>Dry Run</u>	Distance from Evaluated Stream: <u>350 ft</u>
<input type="checkbox"/> CWH Name: <input type="text"/>	Distance from Evaluated Stream: <input type="text"/>
<input type="checkbox"/> EWH Name: <input type="text"/>	Distance from Evaluated Stream: <input type="text"/>

**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**

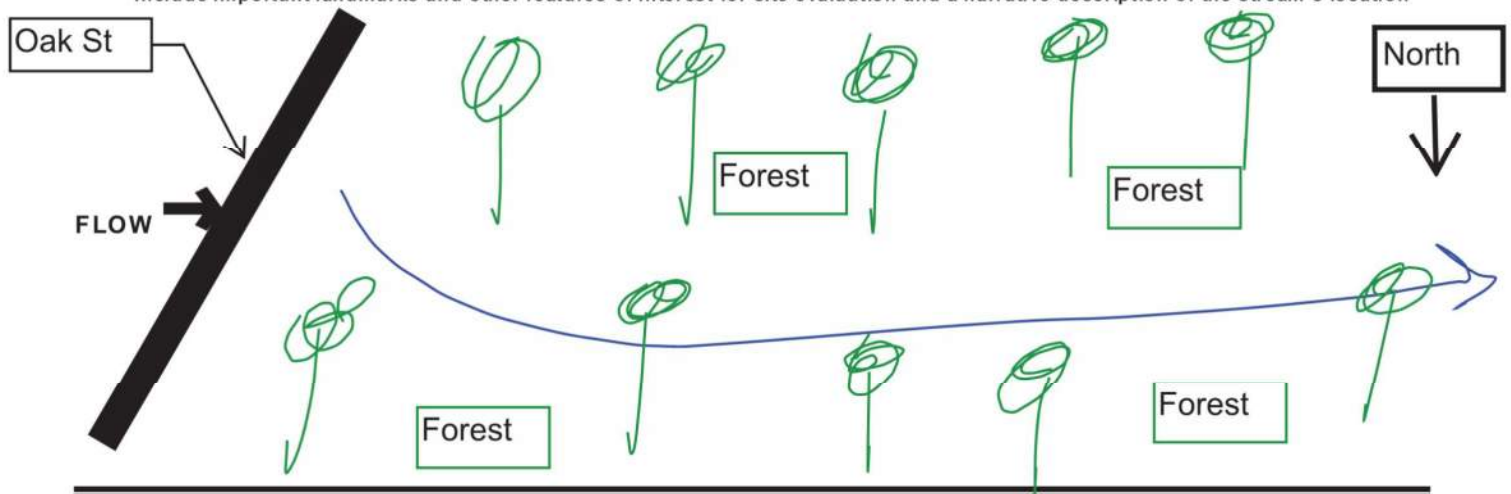
Base Flow Conditions? (Y/N): N Date of last precipitation: 01/05/20 Quantity: 0.16in  
Photograph Information: 3 photos, upstream, downstream and substrate  
Elevated Turbidity? (Y/N): N Canopy (% open): 80%  
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach 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







## Primary Headwater Habitat Evaluation Form

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HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION **FE Lincoln Park-Riverbend 138kV Transmission Line**

hh-jbl-20200106-01 SITE NUMBER **01** RIVER BASIN **Mahoning River** DRAINAGE AREA (mi<sup>2</sup>) **< .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 ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY

MODIFICATIONS: **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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> SILT [3 pt]	<input type="text" value="10%"/>
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="text" value="5%"/>	<input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="text" value="30%"/>
<input type="checkbox"/> BEDROCK [16 pt]	<input type="text" value="0%"/>	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="text" value="0%"/>
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="text" value="20%"/>	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="text" value="0%"/>
<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="text" value="5%"/>	<input type="checkbox"/> MUCK [0 pts]	<input type="text" value="0%"/>
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="text" value="5%"/>	<input checked="" type="checkbox"/> ARTIFICIAL [3 pts]	<input type="text" value="25%"/>

Total of Percentages of  
Bldr Slabs, Boulder, Cobble, Bedrock **25.00%**

(A)

Substrate Percentage  
Check **100%**

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **6**TOTAL NUMBER OF SUBSTRATE TYPES: **7**HHEI  
Metric  
PointsSubstrate  
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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input checked="" type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> 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):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 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		FLOODPLAIN QUALITY			
L	R	L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)			
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wide >10m		Mature Forest, Wetland		Conservation Tillage	
Moderate 5-10m		Immature Forest, Shrub or Old Field		<input type="checkbox"/>	<input type="checkbox"/>
Narrow <5m		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
None		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Residential, Park, New Field		Open Pasture, Row Crop	
		Fenced Pasture		Mining or Construction	

COMMENTS

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stream Flowing	Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/>	<input type="checkbox"/>
Subsurface flow with isolated pools (Interstitial)	Dry channel, no water (Ephemeral)

COMMENTS **recent rain**SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
None	1.0	2.0	3.0
<input checked="" type="checkbox"/>	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)

QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score  (If Yes, Attach Completed QHEI Form)

<input checked="" type="checkbox"/>	WWH Name:	Dry Run	Distance from Evaluated Stream	290 ft
<input type="checkbox"/>	CWH Name:		Distance from Evaluated Stream	
<input type="checkbox"/>	EWH Name:		Distance from Evaluated Stream	

USGS Quadrangle Name: **Campbell** NRCS Soil Map Page: **NA** NRCS Soil Map Stream Order: **NA**  
County: **Mahoning** Township / City: **Youngstown**

Base Flow Conditions? (Y/N):  Date of last precipitation:  Quantity:

Photograph Information:

Elevated Turbidity? (Y/N):  Canopy (% open):

Were samples collected for water chemistry? (Y/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)  If not, please explain:

Overall Stability of BOTH Stream Banks (check one):	Stable <input type="checkbox"/>	Moderately Stable <input checked="" type="checkbox"/>	Unstable <input type="checkbox"/>
---	---------------------------------	---	-----------------------------------

**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

The map shows a stream reach with a green line representing the stream boundary and a blue line representing the stream channel. Key features include:

- Stream head**: Indicated by an arrow pointing to the start of the stream channel.
- bedrock head out**: Indicated by an arrow pointing to a feature near the stream head.
- artificial debris**: Indicated by an arrow pointing to a feature in the stream channel.
- steep**: Two areas labeled "steep" are shown on either side of the stream channel.
- wooded**: Two areas labeled "wooded" are shown on either side of the stream channel.
- residential lawn**: A box labeled "residential lawn" is shown on the left side of the stream.
- hh-jbl-20200106**: A box labeled "hh-jbl-20200106" is shown on the right side of the stream.
- FLOW**: A large black arrow labeled "FLOW" points to the right, indicating the direction of water flow.
- North Arrow**: A hand-drawn arrow pointing towards the top right, labeled "N", indicates the orientation.

PHWH Form Page - 2

October 24, 2002 Revision

Save as pdf

Reset Form





## Primary Headwater Habitat Evaluation Form

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HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION **FE Lincoln Park-Riverbend 138kV Transmission Line**

hh-jbl-20200106-02

SITE NUMBER **02**RIVER BASIN **Mahoning River**DRAINAGE AREA (mi<sup>2</sup>) **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 ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY  
 MODIFICATIONS: **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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> SILT [3 pt]	<input type="checkbox"/> 5%
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="checkbox"/> 5%	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="checkbox"/> 15%
<input type="checkbox"/> BEDROCK [16 pt]	<input type="checkbox"/> 0%	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="checkbox"/> 0%
<input checked="" type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="checkbox"/> 20%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="checkbox"/> 0%
<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="checkbox"/> 15%	<input type="checkbox"/> MUCK [0 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="checkbox"/> 5%	<input checked="" type="checkbox"/> ARTIFICIAL [3 pts]	<input type="checkbox"/> 35%

Total of Percentages of  
Bldr Slabs, Boulder, Cobble, Bedrock **25.00%**

(A)

Substrate Percentage Check **100%**

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **15**TOTAL NUMBER OF SUBSTRATE TYPES: **7**HHEI  
Metric  
PointsSubstrate  
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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input checked="" type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> 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):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input checked="" type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 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		FLOODPLAIN QUALITY		
L	R	L	R	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Conservation Tillage
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Urban or Industrial
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Open Pasture, Row Crop
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Mining or Construction
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

COMMENTS

**FLOW REGIME** (At Time of Evaluation) (Check ONLY one box):

<input checked="" type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS **recent rain****SINUOSITY** (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input checked="" type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >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, downstream 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:

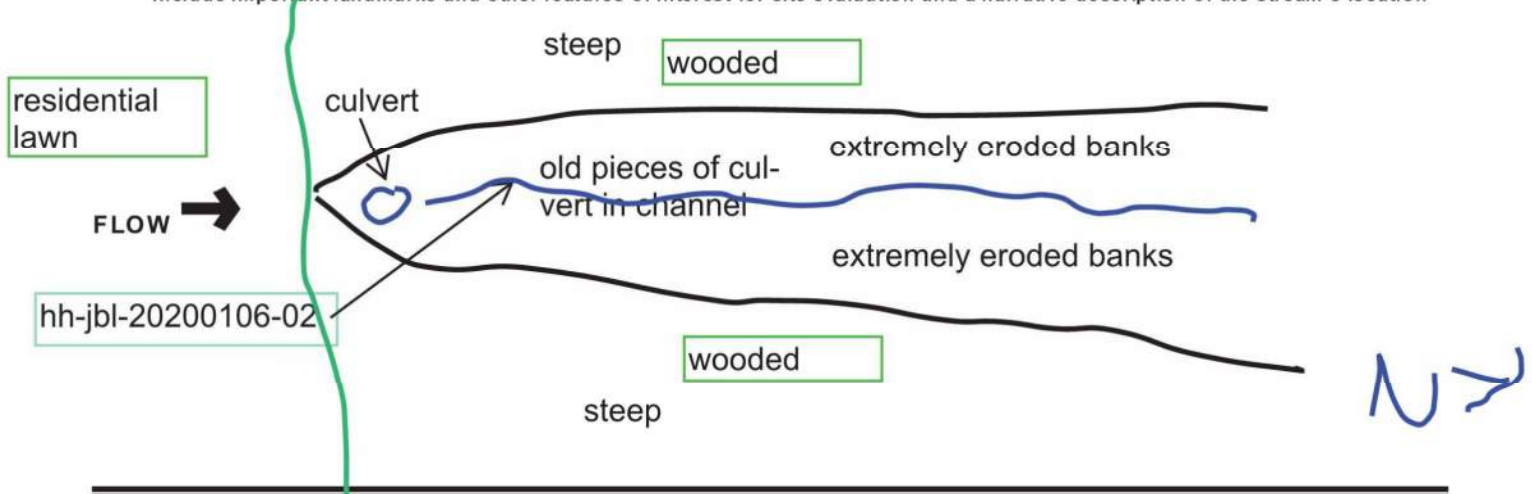
Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☐ Unstable ☒

**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





## Primary Headwater Habitat Evaluation Form

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HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION FE Lincoln Park-Riverbend 138kV Transmission Line

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 ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY  
 MODIFICATIONS: 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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> SILT [3 pt]	<input type="checkbox"/> 15%
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="checkbox"/> 2%	<input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="checkbox"/> 30%
<input type="checkbox"/> BEDROCK [16 pt]	<input type="checkbox"/> 0%	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="checkbox"/> 0%
<input checked="" type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="checkbox"/> 20%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="checkbox"/> 0%
<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="checkbox"/> 13%	<input type="checkbox"/> MUCK [0 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="checkbox"/> 5%	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="checkbox"/> 15%

Total of Percentages of  
Bldr Slabs, Boulder, Cobble, Bedrock **22.00%**

(A)

Substrate Percentage  
Check 100%

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15

TOTAL NUMBER OF SUBSTRATE TYPES: 7

HHEI  
Metric  
PointsSubstrate  
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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input checked="" type="checkbox"/> 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):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 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		FLOODPLAIN QUALITY	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

COMMENTS

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input checked="" type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS recent rain

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input checked="" type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >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:  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:  NRCS Soil Map Page:  NRCS Soil Map Stream Order   
County:  Township / City:

**MISCELLANEOUS**

Base Flow Conditions? (Y/N):  Date of last precipitation:  Quantity:   
Photograph Information:   
Elevated Turbidity? (Y/N):  Canopy (% open):   
Were samples collected for water chemistry? (Y/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)  If not, please explain:

Additional comments/description of pollution impacts:

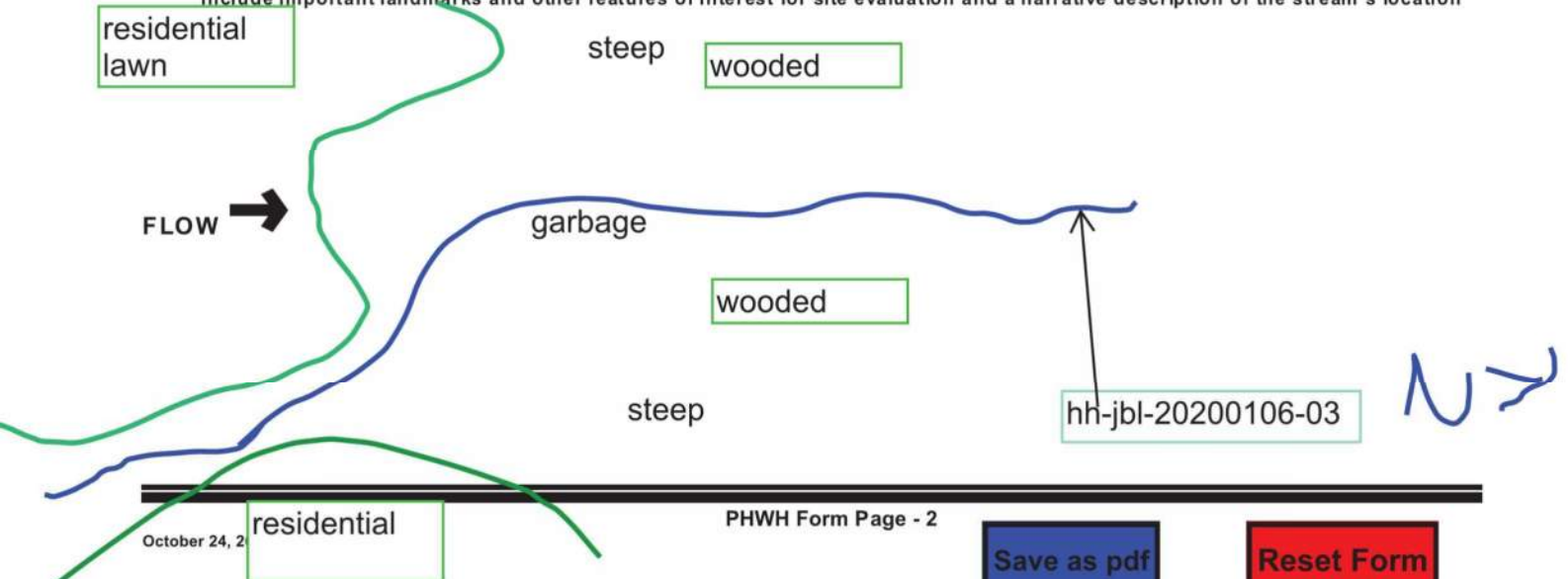
Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☒ Unstable ☐

**BIOTIC EVALUATION**

Performed? (Y/N):  (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)  Voucher? (Y/N)  Salamanders Observed? (Y/N)  Voucher? (Y/N)   
Frogs or Tadpoles Observed? (Y/N)  Voucher? (Y/N)  Aquatic Macroinvertebrates Observed? (Y/N)  Voucher? (Y/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







## Primary Headwater Habitat Evaluation Form

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HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION **FE Lincoln Park-Riverbend 138kV Transmission Line**

hh-jbl-20200106-04

SITE NUMBER **04**RIVER BASIN **Mahoning River**DRAINAGE AREA (mi<sup>2</sup>) **<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 PWH Streams" for Instructions

## STREAM CHANNEL

☐ NONE / NATURAL CHANNEL
 ☐ RECOVERED
 ☒ RECOVERING
 ☐ RECENT OR NO RECOVERY

## MODIFICATIONS:

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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> SILT [3 pt]	<input type="checkbox"/> 15%
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="checkbox"/> 2%	<input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="checkbox"/> 45%
<input type="checkbox"/> BEDROCK [16 pt]	<input type="checkbox"/> 0%	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="checkbox"/> 0%
<input checked="" type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="checkbox"/> 18%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="checkbox"/> 0%
<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="checkbox"/> 10%	<input type="checkbox"/> MUCK [0 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="checkbox"/> 5%	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="checkbox"/> 5%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **20.00%**

(A)

Substrate Percentage Check **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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input checked="" type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

Pool Depth Max = 30

**0**COMMENTS **MAXIMUM POOL DEPTH (Inches): 0.00**

3. **BANK FULL WIDTH** (Measured as the average of 3-4 measurements) (Check ONLY one box):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

Bankfull Width Max=30

**5**COMMENTS **AVERAGE BANKFULL WIDTH (Feet): 2.00**

## 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)
<input type="checkbox"/>	<input type="checkbox"/>	Wide >10m
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Moderate 5-10m
<input type="checkbox"/>	<input type="checkbox"/>	Narrow <5m
<input type="checkbox"/>	<input type="checkbox"/>	None

COMMENTS

## FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)
<input type="checkbox"/>	<input type="checkbox"/>	Mature Forest, Wetland
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Immature Forest, Shrub or Old Field
<input type="checkbox"/>	<input type="checkbox"/>	Residential, Park, New Field
<input type="checkbox"/>	<input type="checkbox"/>	Fenced Pasture

L	R	
<input type="checkbox"/>	<input type="checkbox"/>	Conservation Tillage
<input type="checkbox"/>	<input type="checkbox"/>	Urban or Industrial
<input type="checkbox"/>	<input type="checkbox"/>	Open Pasture, Row Crop
<input type="checkbox"/>	<input type="checkbox"/>	Mining or Construction

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input checked="" type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS **recent rain**SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input checked="" type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >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, downstream 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:

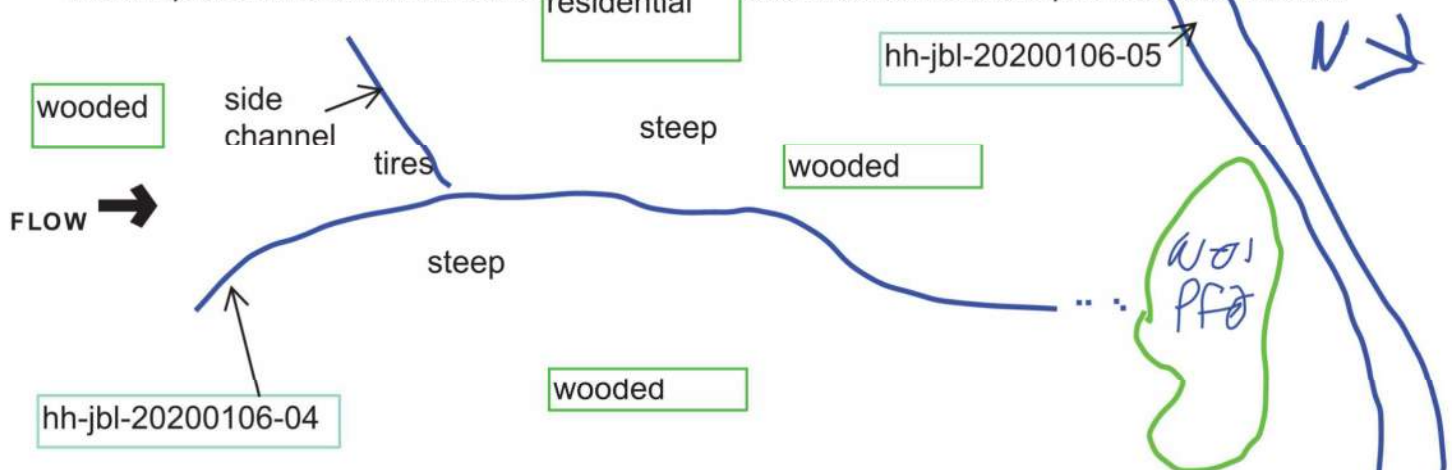
Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☐ Unstable ☒

**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







## Primary Headwater Habitat Evaluation Form

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HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION **FE Lincoln Park-Riverbend 138kV Transmission Line**

hh-jbl-20200106-05 SITE NUMBER **05** RIVER BASIN **Mahoning River** DRAINAGE AREA (mi<sup>2</sup>) **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 ☐ NONE / NATURAL CHANNEL ☒ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

MODIFICATIONS: **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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> SILT [3 pt]	<input type="checkbox"/> 20%
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="checkbox"/> 5%
<input type="checkbox"/> BEDROCK [16 pt]	<input type="checkbox"/> 0%	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="checkbox"/> 20%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="checkbox"/> 0%
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="checkbox"/> 30%	<input type="checkbox"/> MUCK [0 pts]	<input type="checkbox"/> 0%
<input checked="" type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="checkbox"/> 25%	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="checkbox"/> 0%

Total of Percentages of  
Bldr Slabs, Boulder, Cobble, Bedrock **20.00%**

(A)

Substrate Percentage  
Check **100%**

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **15**TOTAL NUMBER OF SUBSTRATE TYPES: **5**HHEI  
Metric  
PointsSubstrate  
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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input checked="" type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

Pool Depth  
Max = 30**25**

COMMENTS **\_\_\_\_\_** MAXIMUM POOL DEPTH (Inches): **6.00**

3. **BANK FULL WIDTH** (Measured as the average of 3-4 measurements) (Check ONLY one box):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> ≤ 1.0 m (<= 3' 3") [5 pts]
<input checked="" type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

Bankfull  
Width  
Max=30**20**

COMMENTS **\_\_\_\_\_** AVERAGE BANKFULL WIDTH (Feet): **7.00**

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream:☆

RIPARIAN WIDTH		FLOODPLAIN QUALITY			
L	R	L	R	L	R
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)			
Wide >10m		Mature Forest, Wetland		Conservation Tillage	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Moderate 5-10m		Immature Forest, Shrub or Old Field		Urban or Industrial	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Narrow <5m		Residential, Park, New Field		Open Pasture, Row Crop	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
None		Fenced Pasture		Mining or Construction	

COMMENTS **\_\_\_\_\_**FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input checked="" type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS **recent rain**SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input checked="" type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >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, downstream 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:

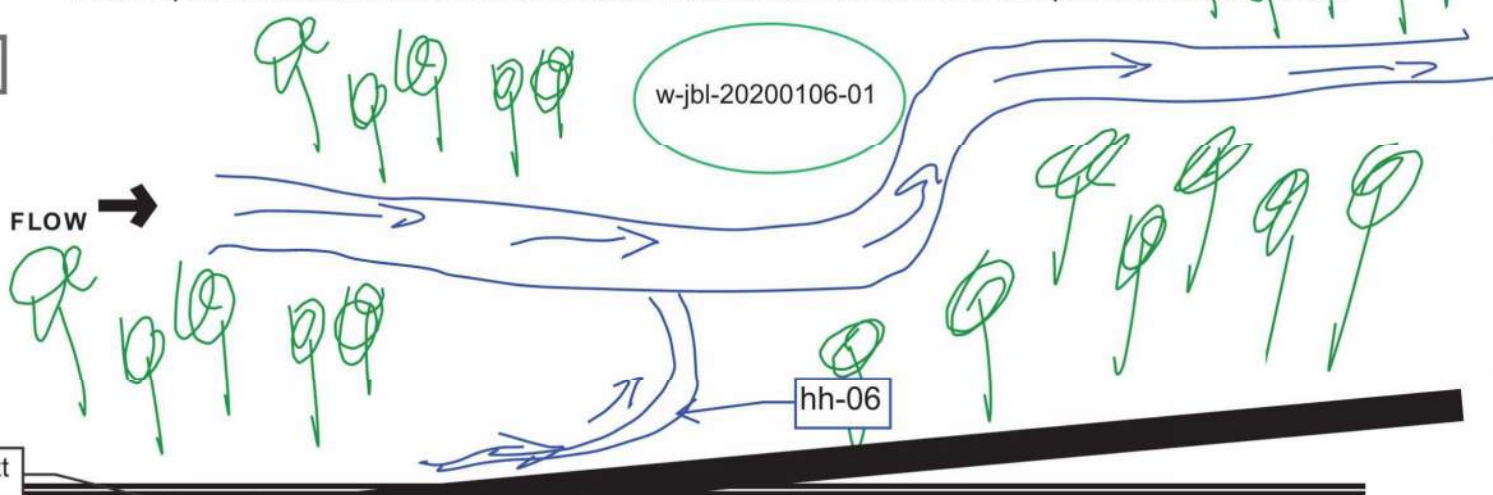
Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☒ Unstable ☐

**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





## Primary Headwater Habitat Evaluation Form

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HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION FE Lincoln Park-Riverbend 138kV Transmission Line

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 ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY  
 MODIFICATIONS: 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
<input type="checkbox"/> BLDR SLABS [16 pts]	0%	<input type="checkbox"/> SILT [3 pt]	15%
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	0%	<input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	25%
<input type="checkbox"/> BEDROCK [16 pt]	0%	<input type="checkbox"/> FINE DETRITUS [3 pts]	0%
<input checked="" type="checkbox"/> COBBLE (65-256 mm) [12 pts]	25%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	0%
<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	20%	<input type="checkbox"/> MUCK [0 pts]	0%
<input type="checkbox"/> SAND (<2 mm) [6 pts]	10%	<input type="checkbox"/> ARTIFICIAL [3 pts]	5%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 25.00%

(A)

Substrate Percentage Check 100%

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15

TOTAL NUMBER OF SUBSTRATE TYPES: 6

HHEI  
Metric  
PointsSubstrate  
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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input checked="" type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> 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):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 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		FLOODPLAIN QUALITY	
L	R	L	R
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)	
Wide >10m		Mature Forest, Wetland	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Immature Forest, Shrub or Old Field	<input checked="" type="checkbox"/>
Moderate 5-10m		Residential, Park, New Field	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fenced Pasture	<input type="checkbox"/>
Narrow <5m			
<input type="checkbox"/>	<input type="checkbox"/>		
None			

COMMENTS

<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stream Flowing	Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/>	<input type="checkbox"/>
Subsurface flow with isolated pools (Interstitial)	Dry channel, no water (Ephemeral)

COMMENTS recent rain

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	1.0	2.0	3.0
None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0.5	<input checked="" type="checkbox"/>	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 0.20  
☐ 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, downstream 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:

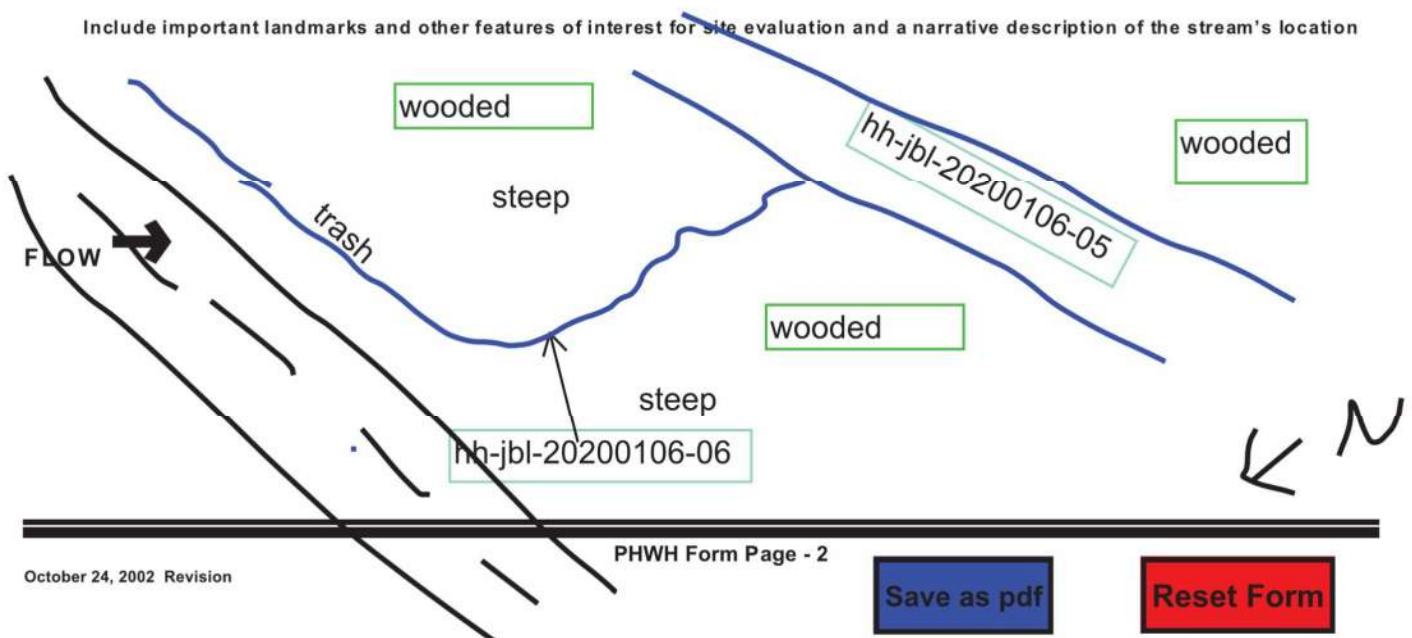
Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☐ Unstable ☒

**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







## Primary Headwater Habitat Evaluation Form

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HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION **FE Lincoln Park-Riverbend 138kV Transmission Line**

hh-jbl-20200107-01

SITE NUMBER **01**RIVER BASIN **Mahoning River**DRAINAGE AREA (mi<sup>2</sup>) **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

☐ NONE / NATURAL CHANNEL
 ☐ RECOVERED
 ☒ RECOVERING
 ☐ RECENT OR NO RECOVERY

## MODIFICATIONS:

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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> SILT [3 pt]	<input checked="" type="checkbox"/> 10%
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input checked="" type="checkbox"/> 15%
<input type="checkbox"/> BEDROCK [16 pt]	<input type="checkbox"/> 0%	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="checkbox"/> 0%
<input checked="" type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input checked="" type="checkbox"/> 25%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="checkbox"/> 0%
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input checked="" type="checkbox"/> 25%	<input type="checkbox"/> MUCK [0 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input checked="" type="checkbox"/> 10%	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input checked="" type="checkbox"/> 15%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **25.00%**

(A)

Substrate Percentage Check **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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input checked="" type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

Pool Depth Max = 30

15

COMMENTS

MAXIMUM POOL DEPTH (Inches): **3.00**

3. **BANK FULL WIDTH** (Measured as the average of 3-4 measurements) (Check ONLY one box):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

Bankfull Width Max=30

5

COMMENTS

AVERAGE BANKFULL WIDTH (Feet): **3.00**This information must also be completed

## RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream:☆

RIPARIAN WIDTH		FLOODPLAIN QUALITY	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Wide >10m		Mature Forest, Wetland	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Moderate 5-10m		Immature Forest, Shrub or Old Field	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Narrow <5m		Residential, Park, New Field	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
None		Fenced Pasture	
			<input type="checkbox"/>
			<input type="checkbox"/>

COMMENTS

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input checked="" type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS **recent rain**SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input checked="" type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >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, downstream 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:

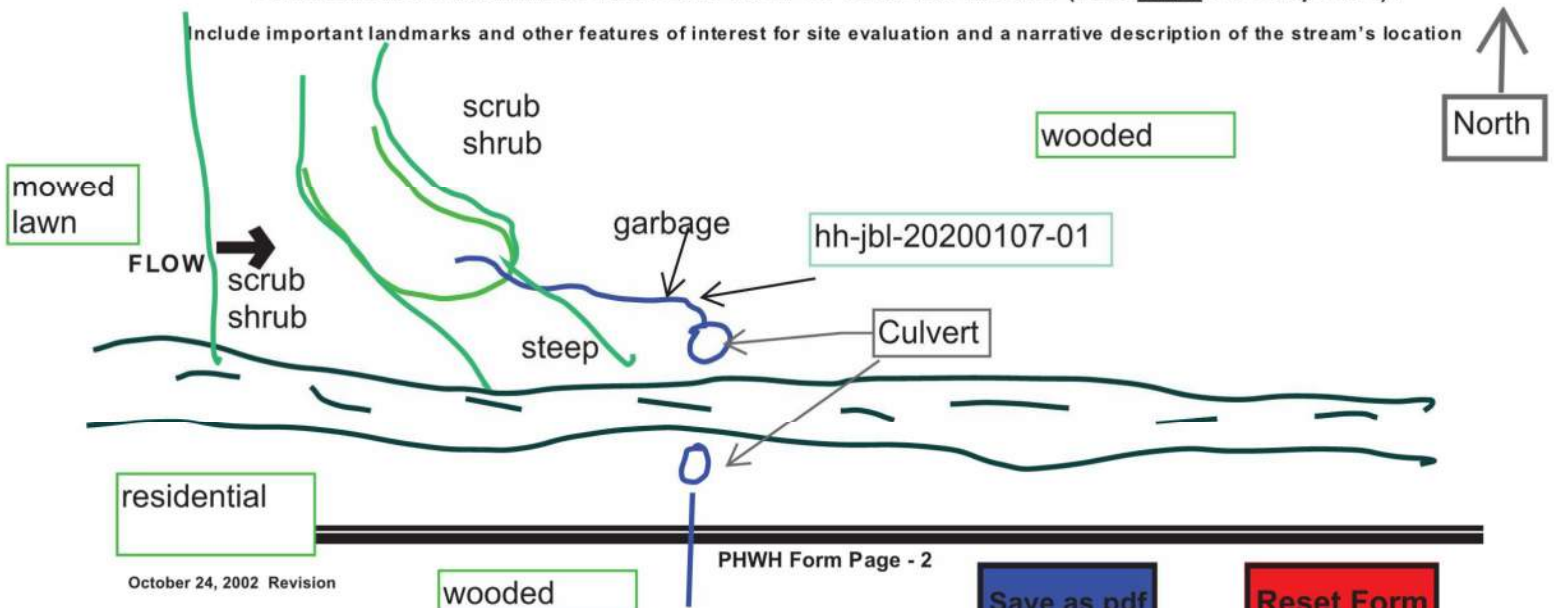
Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☐ Unstable ☒

**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







## Primary Headwater Habitat Evaluation Form

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HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION FE Lincoln Park-Riverbend 138kV Transmission Line

hh-jbl-20200107-02

SITE NUMBER 02

RIVER BASIN Mahoning River

DRAINAGE AREA (mi<sup>2</sup>) 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 ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY  
 MODIFICATIONS: 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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="checkbox"/> 0%	<input checked="" type="checkbox"/> SILT [3 pt]	<input type="checkbox"/> 35%
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="checkbox"/> 25%
<input type="checkbox"/> BEDROCK [16 pt]	<input type="checkbox"/> 0%	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="checkbox"/> 0%
<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="checkbox"/> 5%	<input type="checkbox"/> MUCK [0 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="checkbox"/> 10%	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="checkbox"/> 0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 0.00%

(A)

Substrate Percentage Check 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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input checked="" type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> 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):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (<= 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 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		FLOODPLAIN QUALITY			
L	R	L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	(Per Bank)		(Most Predominant per Bank)		Conservation Tillage
<input checked="" type="checkbox"/>	Wide >10m	<input checked="" type="checkbox"/>	Mature Forest, Wetland	<input type="checkbox"/>	Urban or Industrial
<input checked="" type="checkbox"/>	Moderate 5-10m	<input checked="" type="checkbox"/>	Immature Forest, Shrub or Old Field	<input type="checkbox"/>	Open Pasture, Row Crop
<input type="checkbox"/>	Narrow <5m	<input type="checkbox"/>	Residential, Park, New Field	<input type="checkbox"/>	Mining or Construction
<input type="checkbox"/>	None	<input type="checkbox"/>	Fenced Pasture		

COMMENTS

**FLOW REGIME** (At Time of Evaluation) (Check ONLY one box):

<input type="checkbox"/> Stream Flowing	<input checked="" type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS recent rain

**SINUOSITY** (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input type="checkbox"/> None	<input checked="" type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >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  0.0 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, downstream 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:

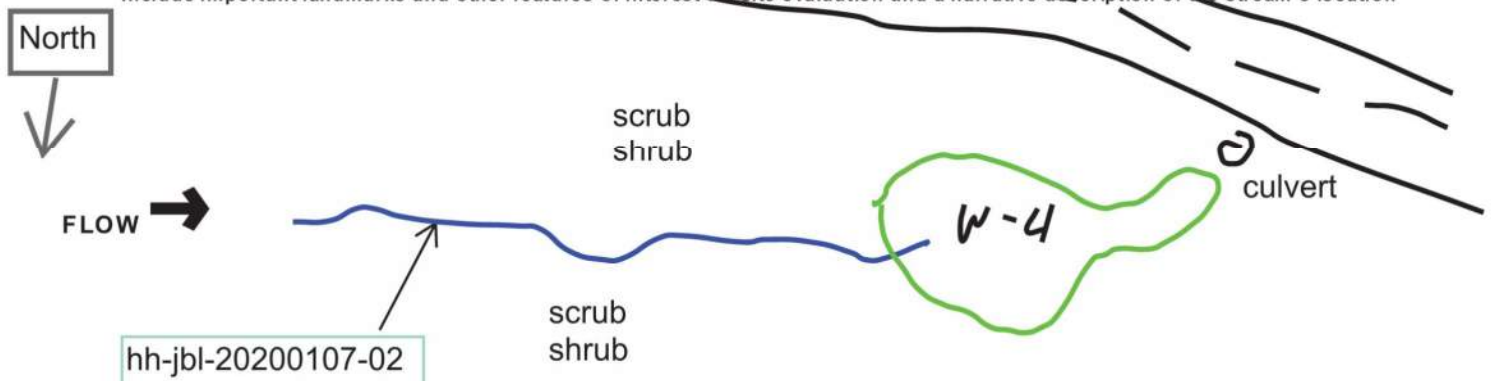
Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☐ Unstable ☒

**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





## Primary Headwater Habitat Evaluation Form

46

HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION FE Lincoln Park-Riverbend 138kV Transmission Line

s-bl-20200108

SITE NUMBER 01

RIVER BASIN Dry Run-Mahoning

DRAINAGE AREA (mi<sup>2</sup>) 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 ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY  
 MODIFICATIONS: 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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="checkbox"/> 0%	<input checked="" type="checkbox"/> SILT [3 pt]	<input type="checkbox"/> 30%
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="checkbox"/> 10%
<input type="checkbox"/> BEDROCK [16 pt]	<input type="checkbox"/> 0%	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="checkbox"/> 0%
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="checkbox"/> 40%	<input type="checkbox"/> MUCK [0 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="checkbox"/> 20%	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="checkbox"/> 0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 0.00%

(A)

Substrate Percentage Check 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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input checked="" type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> 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):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input checked="" type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 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		FLOODPLAIN QUALITY		
L	R	L	R	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Conservation Tillage
		<input type="checkbox"/>	<input checked="" type="checkbox"/>	Urban or Industrial
		<input type="checkbox"/>	<input type="checkbox"/>	Open Pasture, Row Crop
		<input type="checkbox"/>	<input type="checkbox"/>	Mining or Construction

COMMENTS scrubby woods all around w/wetland along LDB

**FLOW REGIME** (At Time of Evaluation) (Check ONLY one box):

<input checked="" type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS intermittent flow regime

**SINUOSITY** (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input checked="" type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >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)









## Primary Headwater Habitat Evaluation Form

26

HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION FE Lincoln Park-Riverbend 138kV Transmission Line

hh-aeh-20200107-07 SITE NUMBER NA RIVER BASIN Dry Run-Mahoning DRAINAGE AREA (mi<sup>2</sup>) 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 ☐ NONE / NATURAL CHANNEL ☒ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY  
 MODIFICATIONS: 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
<input type="checkbox"/> BLDR SLABS [16 pts]	0%	<input type="checkbox"/> SILT [3 pt]	50%
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	0%	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	10%
<input type="checkbox"/> BEDROCK [16 pt]	0%	<input type="checkbox"/> FINE DETRITUS [3 pts]	0%
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	0%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	5%
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	35%	<input type="checkbox"/> MUCK [0 pts]	0%
<input type="checkbox"/> SAND (<2 mm) [6 pts]	0%	<input type="checkbox"/> ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 0.00%

(A)

Substrate Percentage Check 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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input checked="" type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> 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):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 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		FLOODPLAIN QUALITY	
L	R	L	R
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)	
Wide >10m		Mature Forest, Wetland	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Immature Forest, Shrub or Old Field	<input type="checkbox"/>
Moderate 5-10m		Residential, Park, New Field	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Fenced Pasture	<input type="checkbox"/>
Narrow <5m			
<input type="checkbox"/>	<input type="checkbox"/>		
None			

COMMENTS

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input checked="" type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input type="checkbox"/> None	<input checked="" type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >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, downstream 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:

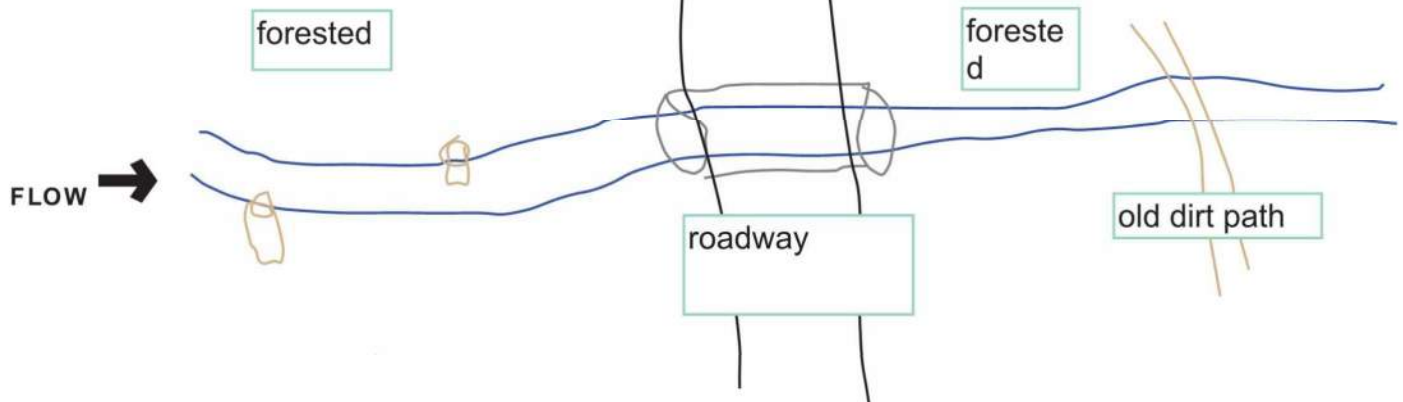
Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☐ Unstable ☒

**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







## Primary Headwater Habitat Evaluation Form

19

HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION FE Lincoln Park-Riverbend 138kV Transmission Line

hh-aeh-20200107-08 SITE NUMBER NA RIVER BASIN Dry Run-Mahoning DRAINAGE AREA (mi<sup>2</sup>) 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 ☐ NONE / NATURAL CHANNEL ☒ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY  
 MODIFICATIONS: 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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="checkbox"/> 0%	<input checked="" type="checkbox"/> SILT [3 pt]	<input type="checkbox"/> 50%
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="checkbox"/> 0%	<input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="checkbox"/> 35%
<input type="checkbox"/> BEDROCK [16 pt]	<input type="checkbox"/> 0%	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="checkbox"/> 0%
<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> MUCK [0 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="checkbox"/> 15%	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="checkbox"/> 0%

Total of Percentages of  
Bldr Slabs, Boulder, Cobble, Bedrock 0.00%

(A)

Substrate Percentage  
Check 100%

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6

TOTAL NUMBER OF SUBSTRATE TYPES: 3

HHEI  
Metric  
PointsSubstrate  
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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input checked="" type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> 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):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 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		FLOODPLAIN QUALITY	
L	R	L	R
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)	
Wide >10m		Mature Forest, Wetland	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Immature Forest, Shrub or Old Field	<input type="checkbox"/>
Moderate 5-10m		Residential, Park, New Field	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Fenced Pasture	<input type="checkbox"/>
Narrow <5m			
<input type="checkbox"/>	<input type="checkbox"/>		
None			

COMMENTS

**FLOW REGIME** (At Time of Evaluation) (Check ONLY one box):

<input checked="" type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS

**SINUOSITY** (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input type="checkbox"/> None	<input checked="" type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >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, downstream 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:

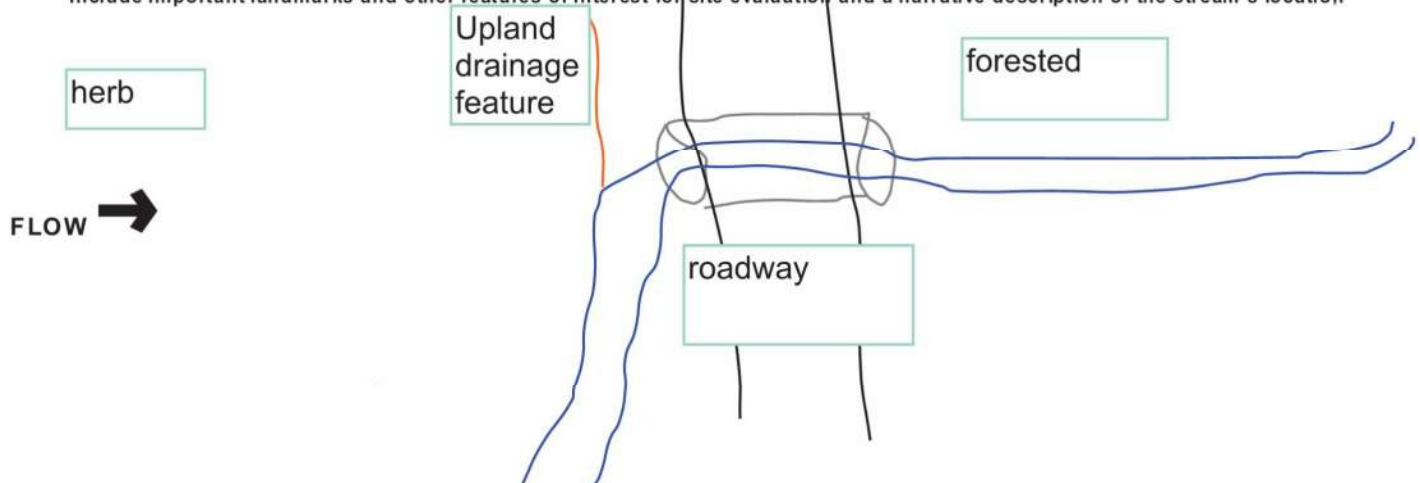
Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☐ Unstable ☒

**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





## Primary Headwater Habitat Evaluation Form

69

HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION FE Lincoln Park-Riverbend 138kV Transmission Line

hh-aeh-20200107-09 SITE NUMBER NA RIVER BASIN Dry Run-Mahoning DRAINAGE AREA (mi<sup>2</sup>) 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 ☐ NONE / NATURAL CHANNEL ☒ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY  
 MODIFICATIONS: 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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> SILT [3 pt]	<input checked="" type="checkbox"/> 35%
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="checkbox"/> 10%
<input type="checkbox"/> BEDROCK [16 pt]	<input type="checkbox"/> 5%	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="checkbox"/> 5%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="checkbox"/> 5%
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input checked="" type="checkbox"/> 35%	<input type="checkbox"/> MUCK [0 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="checkbox"/> 5%	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="checkbox"/> 0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **10.00%**

(A)

Substrate Percentage Check 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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input checked="" type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> 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):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input checked="" type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 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		FLOODPLAIN QUALITY			
L	R	L	R	L	R
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)			
Wide >10m		Mature Forest, Wetland		Conservation Tillage	
<input type="checkbox"/> Moderate 5-10m		<input checked="" type="checkbox"/> Immature Forest, Shrub or Old Field		<input type="checkbox"/> Urban or Industrial	
<input type="checkbox"/> Narrow <5m		<input type="checkbox"/> Residential, Park, New Field		<input type="checkbox"/> Open Pasture, Row Crop	
<input type="checkbox"/> None		<input type="checkbox"/> Fenced Pasture		<input type="checkbox"/> Mining or Construction	

COMMENTS

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input checked="" type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input checked="" type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >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, downstream 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:

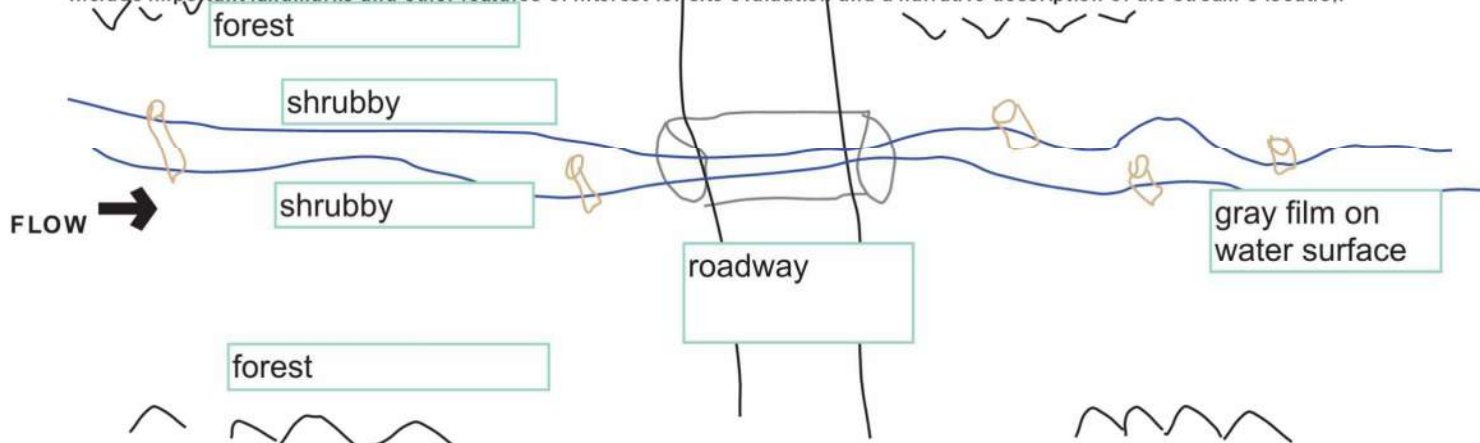
Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☒ Unstable ☐

**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







## Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) :

25

SITE NAME/LOCATION FE Lincoln Park-Riverbend 138kV Transmission Line

hh-aeh-20200107-10 SITE NUMBER NA RIVER BASIN Dry Run-Mahoning DRAINAGE AREA (mi<sup>2</sup>) 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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> SILT [3 pt]	<input checked="" type="checkbox"/> 55%
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="checkbox"/> 10%
<input type="checkbox"/> BEDROCK [16 pt]	<input type="checkbox"/> 0%	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="checkbox"/> 0%
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input checked="" type="checkbox"/> 35%	<input type="checkbox"/> MUCK [0 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="checkbox"/> 0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 0.00%

(A)

Substrate Percentage Check 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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input checked="" type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> 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):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 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		FLOODPLAIN QUALITY			
L	R	L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	(Per Bank)		(Most Predominant per Bank)		Conservation Tillage
<input type="checkbox"/>	Wide >10m	<input type="checkbox"/>	Mature Forest, Wetland	<input type="checkbox"/>	Urban or Industrial
<input checked="" type="checkbox"/>	Moderate 5-10m	<input checked="" type="checkbox"/>	Immature Forest, Shrub or Old Field	<input type="checkbox"/>	Open Pasture, Row Crop
<input checked="" type="checkbox"/>	Narrow <5m	<input checked="" type="checkbox"/>	Residential, Park, New Field	<input type="checkbox"/>	Mining or Construction
<input type="checkbox"/>	None	<input type="checkbox"/>	Fenced Pasture	<input type="checkbox"/>	

COMMENTS

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input checked="" type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input type="checkbox"/> None	<input checked="" type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >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, downstream 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:

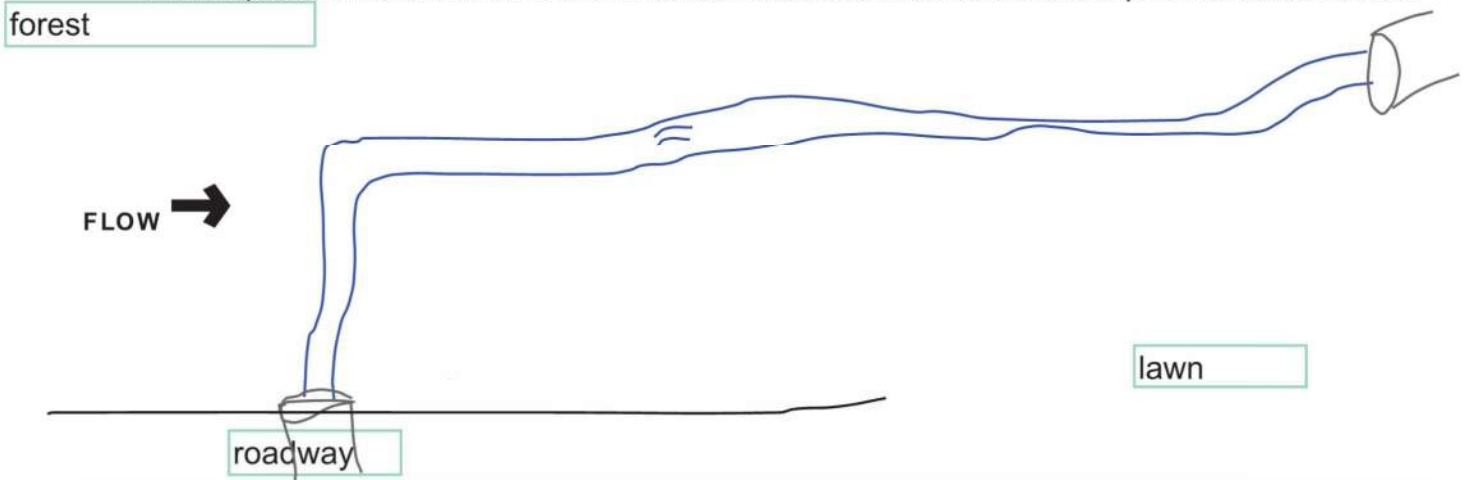
Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☒ Unstable ☐

**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







## Primary Headwater Habitat Evaluation Form

19

HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION FE Lincoln Park-Riverbend 138kV Transmission Line

hh-aeh-20200107-01 SITE NUMBER NA RIVER BASIN Dry Run-Mahoning DRAINAGE AREA (mi<sup>2</sup>) 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 ☐ NONE / NATURAL CHANNEL ☒ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY  
 MODIFICATIONS:

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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="checkbox"/> 0%	<input checked="" type="checkbox"/> SILT [3 pt]	<input type="checkbox"/> 65%
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="checkbox"/> 0%	<input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="checkbox"/> 20%
<input type="checkbox"/> BEDROCK [16 pt]	<input type="checkbox"/> 0%	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="checkbox"/> 15%
<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> MUCK [0 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="checkbox"/> 0%

Total of Percentages of  
Bldr Slabs, Boulder, Cobble, Bedrock **0.00%**

(A)

Substrate Percentage  
Check **100%**

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **6**TOTAL NUMBER OF SUBSTRATE TYPES: **3**HHEI  
Metric  
PointsSubstrate  
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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input checked="" type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> 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):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 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		FLOODPLAIN QUALITY			
L	R	L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

COMMENTS

**FLOW REGIME** (At Time of Evaluation) (Check ONLY one box):

<input checked="" type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS

**SINUOSITY** (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input checked="" type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >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  0.43  
☐ 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, downstream 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:

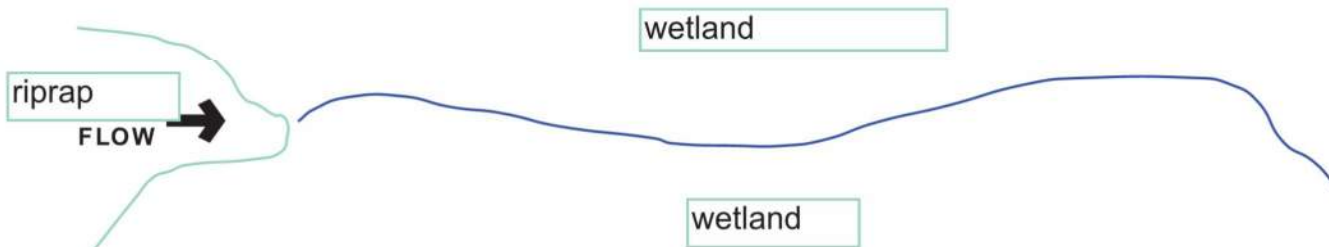
Overall Stability of BOTH Stream Banks (check one): Stable ☒ Moderately Stable ☐ Unstable ☐

**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





## Primary Headwater Habitat Evaluation Form

19

HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION **FE Lincoln Park-Riverbend 138kV Transmission Line**

**hh-aeh-20200107-02** SITE NUMBER **NA** RIVER BASIN **Dry Run-Mahoning** DRAINAGE AREA (mi<sup>2</sup>) **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 ☒ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

MODIFICATIONS: \_\_\_\_\_

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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="text" value="0%"/>	<input checked="" type="checkbox"/> SILT [3 pt]	<input type="text" value="75%"/>
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="text" value="0%"/>	<input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="text" value="20%"/>
<input type="checkbox"/> BEDROCK [16 pt]	<input type="text" value="0%"/>	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="text" value="0%"/>
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="text" value="5%"/>	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="text" value="0%"/>
<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> MUCK [0 pts]	<input type="text" value="0%"/>
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="text" value="0%"/>

Total of Percentages of  
Bldr Slabs, Boulder, Cobble, Bedrock **5.00%**

(A)

Substrate Percentage  
Check **100%**

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **6**TOTAL NUMBER OF SUBSTRATE TYPES: **3**HHEI  
Metric  
PointsSubstrate  
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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input checked="" type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> 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):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 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		FLOODPLAIN QUALITY			
L	R	L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)			
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wide >10m		Mature Forest, Wetland		Conservation Tillage	
Moderate 5-10m		Immature Forest, Shrub or Old Field		<input type="checkbox"/>	<input type="checkbox"/>
Narrow <5m		Residential, Park, New Field		<input type="checkbox"/>	<input type="checkbox"/>
None		Fenced Pasture		<input type="checkbox"/>	<input type="checkbox"/>
				Open Pasture, Row Crop	
				Mining or Construction	

COMMENTS \_\_\_\_\_

**FLOW REGIME** (At Time of Evaluation) (Check ONLY one box):

<input checked="" type="checkbox"/>	Stream Flowing	<input type="checkbox"/>	Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/>	Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/>	Dry channel, no water (Ephemeral)

COMMENTS \_\_\_\_\_

**SINUOSITY** (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input type="checkbox"/>	None	<input type="checkbox"/>	1.0	<input type="checkbox"/>	2.0	<input type="checkbox"/>	3.0
<input checked="" type="checkbox"/>	0.5	<input type="checkbox"/>	1.5	<input type="checkbox"/>	2.5	<input type="checkbox"/>	>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, downstream 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:

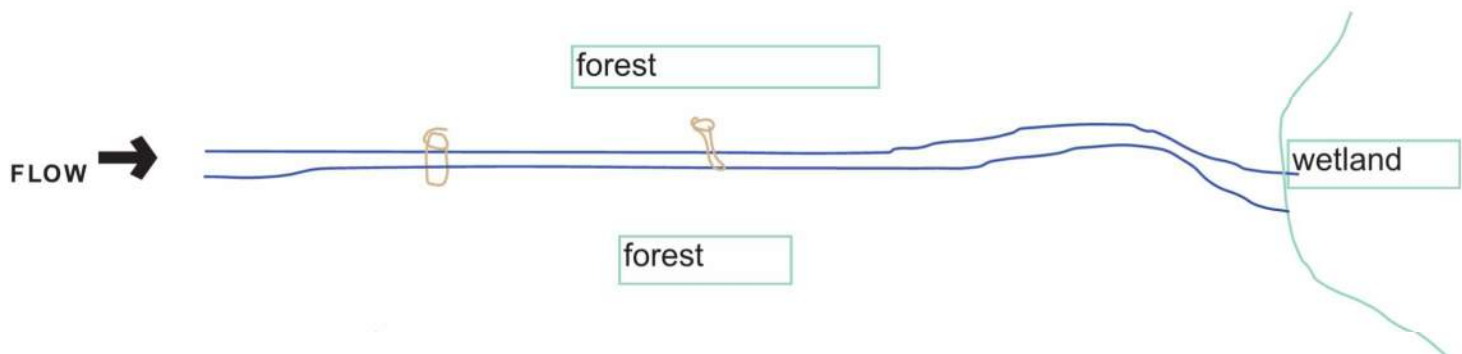
Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☒ Unstable ☐

**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







## Primary Headwater Habitat Evaluation Form

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HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION FE Lincoln Park-Riverbend 138kV Transmission Line

hh-aeh-20200107-04 SITE NUMBER NA RIVER BASIN Dry Run-Mahoning DRAINAGE AREA (mi<sup>2</sup>) 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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="text" value="0%"/>	<input checked="" type="checkbox"/> SILT [3 pt]	<input type="text" value="75%"/>
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="text" value="25%"/>
<input type="checkbox"/> BEDROCK [16 pt]	<input type="text" value="0%"/>	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="text" value="0%"/>
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="text" value="0%"/>
<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> MUCK [0 pts]	<input type="text" value="0%"/>
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="text" value="0%"/>

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock

(A)

Substrate Percentage Check 

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES: 

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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input checked="" type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS

MAXIMUM POOL DEPTH (Inches): 

Pool Depth Max = 30

0

3. **BANK FULL WIDTH** (Measured as the average of 3-4 measurements) (Check ONLY one box):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

COMMENTS

AVERAGE BANKFULL WIDTH (Feet): 

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		FLOODPLAIN QUALITY	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

COMMENTS

**FLOW REGIME** (At Time of Evaluation) (Check ONLY one box):

<input type="checkbox"/> Stream Flowing	<input checked="" type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS

**SINUOSITY** (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input checked="" type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >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, downstream 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:

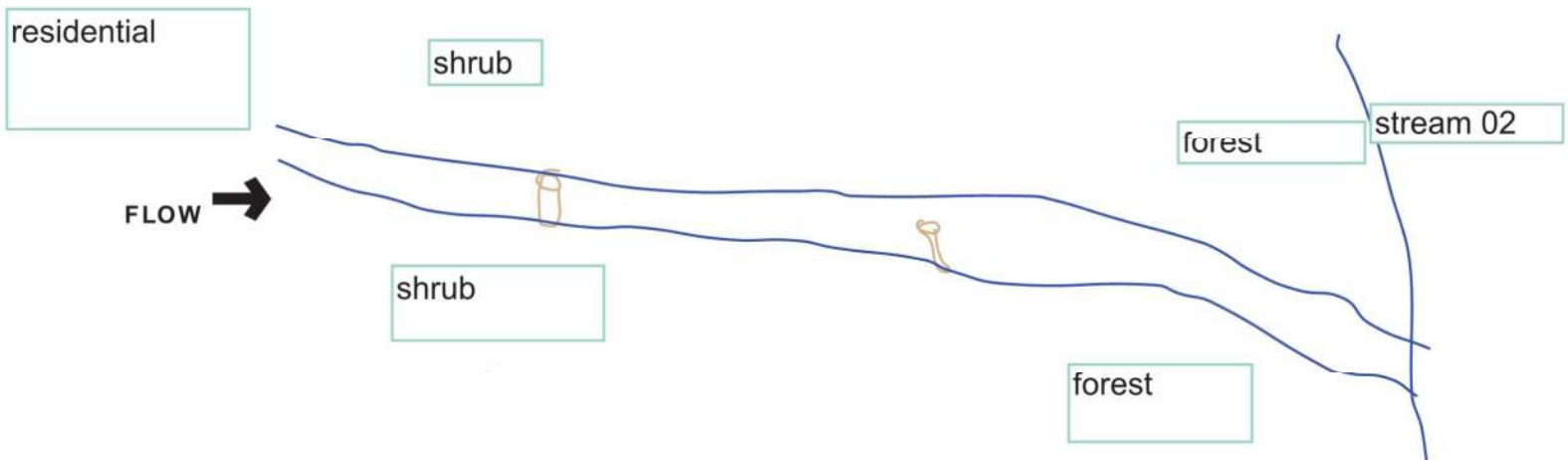
Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☒ Unstable ☐

**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







## Primary Headwater Habitat Evaluation Form

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HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION **FE Lincoln Park-Riverbend 138kV Transmission Line**

**hh-aeh-20200107-03** SITE NUMBER **NA** RIVER BASIN **Dry Run-Mahoning** DRAINAGE AREA (mi<sup>2</sup>) **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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="text" value="0%"/>	<input checked="" type="checkbox"/> SILT [3 pt]	<input type="text" value="75%"/>
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="text" value="0%"/>	<input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="text" value="25%"/>
<input type="checkbox"/> BEDROCK [16 pt]	<input type="text" value="0%"/>	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="text" value="0%"/>
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="text" value="0%"/>
<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> MUCK [0 pts]	<input type="text" value="0%"/>
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="text" value="0%"/>	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="text" value="0%"/>

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **0.00%**

(A)

Substrate Percentage Check **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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input checked="" type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> 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):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 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		FLOODPLAIN QUALITY			
L	R	L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)			
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wide >10m		Mature Forest, Wetland		Conservation Tillage	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Moderate 5-10m		Immature Forest, Shrub or Old Field		Urban or Industrial	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Narrow <5m		Residential, Park, New Field		Open Pasture, Row Crop	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
None		Fenced Pasture		Mining or Construction	

COMMENTS

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stream Flowing	Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/>	<input type="checkbox"/>
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):

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
None	1.0	2.0	3.0
<input checked="" type="checkbox"/>	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, downstream 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:

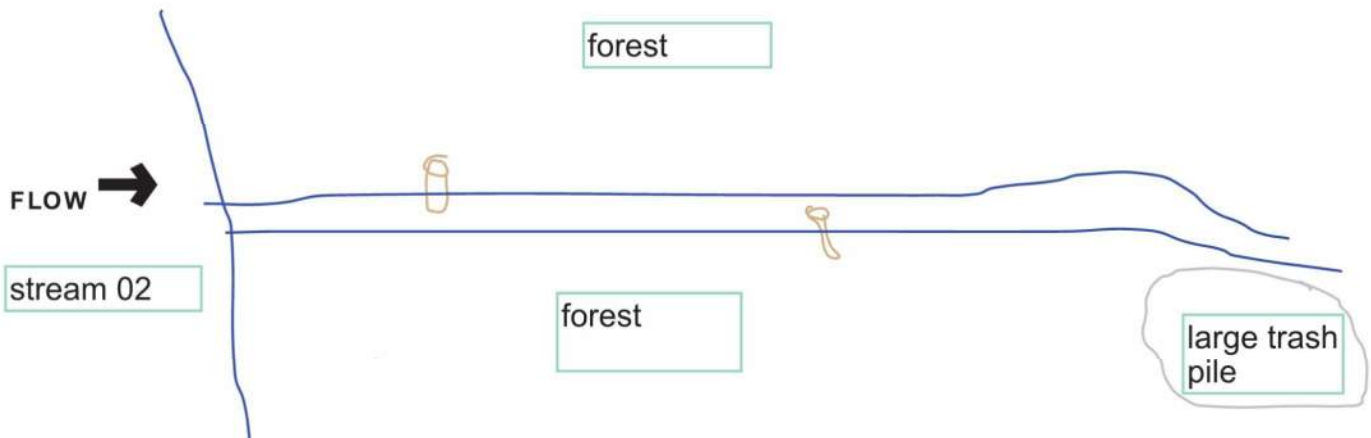
Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☒ Unstable ☐

**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





## Primary Headwater Habitat Evaluation Form

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HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION **FE Lincoln Park-Riverbend 138kV Transmission Line**

**hh-aeh-20200107-05** SITE NUMBER **NA** RIVER BASIN **Dry Run-Mahoning** DRAINAGE AREA (mi<sup>2</sup>) **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 PWH Streams" for Instructions

STREAM CHANNEL ☐ NONE / NATURAL CHANNEL ☒ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

MODIFICATIONS: **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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> SILT [3 pt]	<input checked="" type="checkbox"/> 30%
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="checkbox"/> 20%
<input type="checkbox"/> BEDROCK [16 pt]	<input type="checkbox"/> 0%	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input checked="" type="checkbox"/> 10%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="checkbox"/> 0%
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input checked="" type="checkbox"/> 40%	<input type="checkbox"/> MUCK [0 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="checkbox"/> 0%

Total of Percentages of  
Bldr Slabs, Boulder, Cobble, Bedrock **10.00%**

(A)

Substrate Percentage  
Check **100%**

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **12**TOTAL NUMBER OF SUBSTRATE TYPES: **4**HHEI  
Metric  
PointsSubstrate  
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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input checked="" type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> 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):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 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		FLOODPLAIN QUALITY			
L	R	L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)			
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wide >10m		Mature Forest, Wetland		Conservation Tillage	
Moderate 5-10m		Immature Forest, Shrub or Old Field		<input type="checkbox"/>	<input type="checkbox"/>
Narrow <5m		<input type="checkbox"/>	<input type="checkbox"/>	Urban or Industrial	
None		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Residential, Park, New Field		Open Pasture, Row Crop	
		Fenced Pasture		<input type="checkbox"/>	<input type="checkbox"/>
				Mining or Construction	

COMMENTS

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input checked="" type="checkbox"/>	Stream Flowing	<input type="checkbox"/>	Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/>	Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/>	Dry channel, no water (Ephemeral)

COMMENTS

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input type="checkbox"/>	None	<input type="checkbox"/>	1.0	<input type="checkbox"/>	2.0	<input type="checkbox"/>	3.0
<input type="checkbox"/>	0.5	<input checked="" type="checkbox"/>	1.5	<input type="checkbox"/>	2.5	<input type="checkbox"/>	>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)

QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score  (If Yes, Attach Completed QHEI Form)

<input checked="" type="checkbox"/>	WWH Name:	Dry Run and Mahoning River	Distance from Evaluated Stream	0.60
<input type="checkbox"/>	CWH Name:		Distance from Evaluated Stream	
<input type="checkbox"/>	EWH Name:		Distance from Evaluated Stream	

USGS Quadrangle Name: **Campbell** NRCS Soil Map Page:  NRCS Soil Map Stream Order

County: **Mahoning** Township / City: **Youngstown**

Base Flow Conditions? (Y/N): ☒ Y Date of last precipitation:  Quantity:

Photograph Information:

Elevated Turbidity? (Y/N):  Canopy (% open):

Were samples collected for water chemistry? (Y/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)  If not, please explain:

Overall Stability of BOTH Stream Banks (check one):	Stable <input type="checkbox"/>	Moderately Stable <input type="checkbox"/>	Unstable <input checked="" type="checkbox"/>
---	---------------------------------	--	--

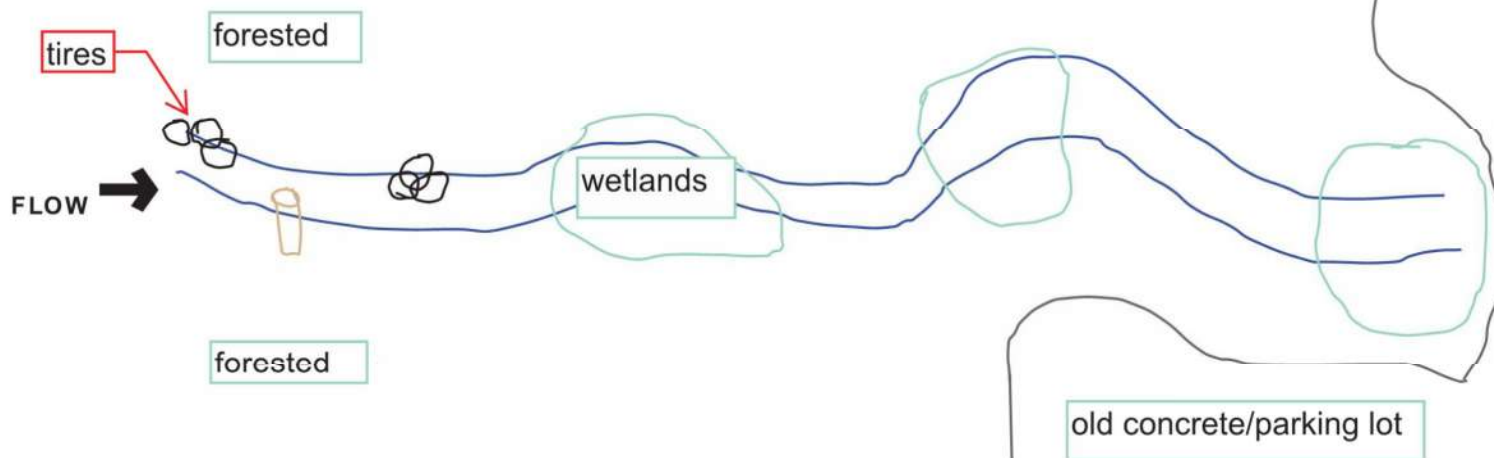
Performed? (Y/N):  (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N)  Voucher? (Y/N)  Salamanders Observed? (Y/N)  Voucher? (Y/N)

Frogs or Tadpoles Observed? (Y/N)  Voucher? (Y/N)  Aquatic Macroinvertebrates Observed? (Y/N)  Voucher? (Y/N)

Comments Regarding Biology:

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location







## Primary Headwater Habitat Evaluation Form

28

HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION **FE Lincoln Park-Riverbend 138kV Transmission Line**

**hh-aeh-20200107-06** SITE NUMBER **NA** RIVER BASIN **Dry Run-Mahoning** DRAINAGE AREA (mi<sup>2</sup>) **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 PWH Streams" for Instructions

STREAM CHANNEL ☒ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

MODIFICATIONS:

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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> SILT [3 pt]	<input type="checkbox"/> 25%
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="checkbox"/> 10%
<input type="checkbox"/> BEDROCK [16 pt]	<input type="checkbox"/> 0%	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="checkbox"/> 20%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="checkbox"/> 5%
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="checkbox"/> 20%	<input type="checkbox"/> MUCK [0 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="checkbox"/> 20%	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="checkbox"/> 0%

Total of Percentages of  
Bldr Slabs, Boulder, Cobble, Bedrock **20.00%**

(A)

Substrate Percentage  
Check **100%**

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **12**TOTAL NUMBER OF SUBSTRATE TYPES: **6**HHEI  
Metric  
PointsSubstrate  
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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input checked="" type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> 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):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 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		FLOODPLAIN QUALITY			
L	R	L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	(Per Bank)	(Most Predominant per Bank)	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Wide >10m	Mature Forest, Wetland	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Moderate 5-10m	Immature Forest, Shrub or Old Field	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Narrow <5m	Residential, Park, New Field	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	None	Fenced Pasture	<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>

COMMENTS

- FLOW REGIME** (At Time of Evaluation) (Check *ONLY* one box):

<input checked="" type="checkbox"/>	Stream Flowing	<input type="checkbox"/>	Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/>	Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/>	Dry channel, no water (Ephemeral)

COMMENTS

- SINUOSITY** (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

<input type="checkbox"/>	None	<input type="checkbox"/>	1.0	<input type="checkbox"/>	2.0	<input type="checkbox"/>	3.0
<input checked="" type="checkbox"/>	0.5	<input type="checkbox"/>	1.5	<input type="checkbox"/>	2.5	<input type="checkbox"/>	>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, downstream 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:

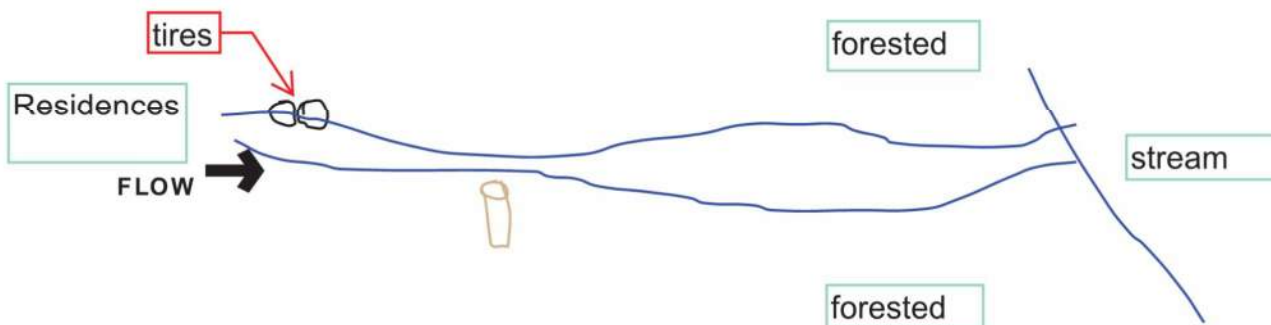
Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☐ Unstable ☒

**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







## Primary Headwater Habitat Evaluation Form

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HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION FE Lincoln Park-Riverbend 138kV Transmission Line

hh-aeh-20200106-02 SITE NUMBER NA RIVER BASIN Dry Run-Mahoning DRAINAGE AREA (mi<sup>2</sup>) 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 ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY  
 MODIFICATIONS: 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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> SILT [3 pt]	<input checked="" type="checkbox"/> 50%
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="checkbox"/> 5%
<input type="checkbox"/> BEDROCK [16 pt]	<input type="checkbox"/> 0%	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="checkbox"/> 0%
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input checked="" type="checkbox"/> 40%	<input type="checkbox"/> MUCK [0 pts]	<input type="checkbox"/> 0%
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="checkbox"/> 0%	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="checkbox"/> 5%

Total of Percentages of  
Bldr Slabs, Boulder, Cobble, Bedrock **0.00%**

(A)

Substrate Percentage  
Check **100%**

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **12**TOTAL NUMBER OF SUBSTRATE TYPES: **4**HHEI  
Metric  
PointsSubstrate  
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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input checked="" type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> 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):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 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		FLOODPLAIN QUALITY			
L	R	L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	(Per Bank)		(Most Predominant per Bank)		
<input type="checkbox"/>	Wide >10m	<input type="checkbox"/>	Mature Forest, Wetland	<input type="checkbox"/>	Conservation Tillage
<input type="checkbox"/>	Moderate 5-10m	<input type="checkbox"/>	Immature Forest, Shrub or Old Field	<input checked="" type="checkbox"/>	Urban or Industrial
<input type="checkbox"/>	Narrow <5m	<input type="checkbox"/>	Residential, Park, New Field	<input type="checkbox"/>	Open Pasture, Row Crop
<input checked="" type="checkbox"/>	None	<input type="checkbox"/>	Fenced Pasture	<input type="checkbox"/>	Mining or Construction

COMMENTS

**FLOW REGIME** (At Time of Evaluation) (Check ONLY one box):

<input checked="" type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS

**SINUOSITY** (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input checked="" type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >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, downstream 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:

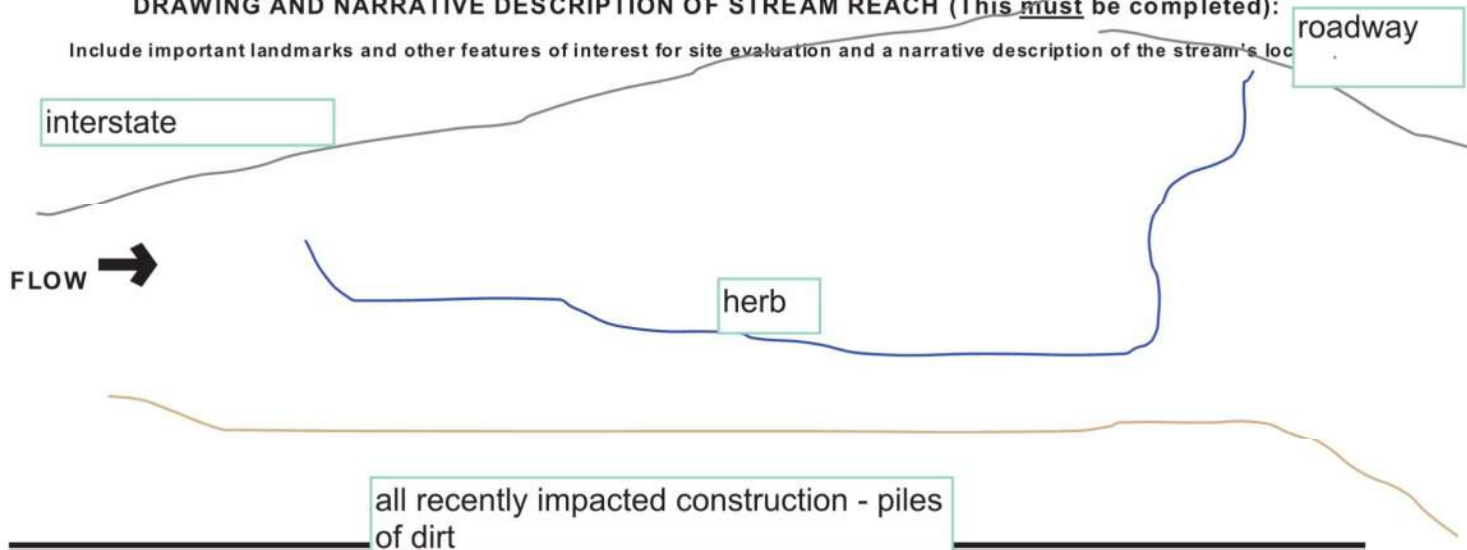
Overall Stability of BOTH Stream Banks (check one): Stable ☐ Moderately Stable ☒ Unstable ☐

**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





# Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

**QHEI Score:** 56
**Stream & Location:** FE Lincoln Park-Riverbend 138kV Transmission Line

**RM:** \_ \_ \_ **Date:** 10/6/2020

QHEI-2020-10-06-BJM-001

**Scorer's Full Name & Affiliation:** Brian Miller AECOM

**River Code:** - - - **STORET #:** - - - **Lat./ Long.:** 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 &amp; average)

BEST TYPES		OTHER TYPES		ORIGIN		QUALITY		Substrate <div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 5px;">19</div> Maximum 20
POOL RIFFLE		POOL RIFFLE						
<input type="checkbox"/> BLDR /SLABS [10]	<input type="checkbox"/>	<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/>	<input checked="" type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/>	<input type="checkbox"/> HEAVY [-2]	<input type="checkbox"/>	<div style="display: flex; align-items: center; justify-content: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">EMBEDDEDNESS</div> <div style="margin: 0 10px;"> <input checked="" type="checkbox"/> SILT   <input type="checkbox"/> SANDSTONE [0]   <input type="checkbox"/> RIP/RAP [0]   <input type="checkbox"/> LACUSTURINE [0]   <input type="checkbox"/> SHALE [-1]   <input type="checkbox"/> COAL FINES [-2] </div> </div>
<input type="checkbox"/> BOULDER [9]	<input type="checkbox"/>	<input type="checkbox"/> DETRITUS [3]	<input type="checkbox"/>	<input checked="" type="checkbox"/> TILLS [1]	<input type="checkbox"/>	<input type="checkbox"/> MODERATE [-1]	<input type="checkbox"/>	
<input checked="" type="checkbox"/> COBBLE [8]	30 40	<input type="checkbox"/> MUCK [2]	<input type="checkbox"/>	<input type="checkbox"/> WETLANDS [0]	<input type="checkbox"/>	<input checked="" type="checkbox"/> NORMAL [0]	<input type="checkbox"/>	
<input checked="" type="checkbox"/> GRAVEL [7]	35 35	<input type="checkbox"/> SILT [2]	20 10	<input type="checkbox"/> HARDPAN [0]	<input type="checkbox"/>	<input type="checkbox"/> FREE [1]	<input type="checkbox"/>	
<input type="checkbox"/> SAND [6]	<input type="checkbox"/>	<input type="checkbox"/> ARTIFICIAL [0]	<input type="checkbox"/>	<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/>	<input type="checkbox"/> EXTENSIVE [-2]	<input type="checkbox"/>	
<input type="checkbox"/> BEDROCK [5]	5 15	(Score natural substrates; ignore)		<input type="checkbox"/> RIP/RAP [0]	<input type="checkbox"/>	<input type="checkbox"/> MODERATE [-1]	<input type="checkbox"/>	
				<input type="checkbox"/> LACUSTURINE [0]	<input type="checkbox"/>	<input checked="" type="checkbox"/> NORMAL [0]	<input type="checkbox"/>	
<b>NUMBER OF BEST TYPES:</b> <input checked="" type="checkbox"/> 4 or more [2] <input type="checkbox"/> 3 or less [0]						<input type="checkbox"/> NONE [1]	<input type="checkbox"/>	

**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.

**AMOUNT**

Check ONE (Or 2 &amp; average)

<input type="1"/> UNDERCUT BANKS [1]	<input type="0"/> POOLS > 70cm [2]	<input type="1"/> OXBOWS, BACKWATERS [1]	<input type="checkbox"/> EXTENSIVE >75% [11]
<input type="1"/> OVERHANGING VEGETATION [1]	<input type="0"/> ROOTWADS [1]	<input type="1"/> AQUATIC MACROPHYTES [1]	<input type="checkbox"/> MODERATE 25-75% [7]
<input type="0"/> SHALLOWS (IN SLOW WATER) [1]	<input type="0"/> BOULDERS [1]	<input type="1"/> LOGS OR WOODY DEBRIS [1]	<input type="checkbox"/> SPARSE 5-<25% [3]
<input type="0"/> ROOTMATS [1]			<input checked="" type="checkbox"/> NEARLY ABSENT <5% [1]

**Comments**
**Cover**  
Maximum 20 6
**3] CHANNEL MORPHOLOGY** Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]
<input checked="" type="checkbox"/> MODERATE [3]	<input checked="" type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input checked="" type="checkbox"/> MODERATE [2]
<input type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input checked="" type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

**Comments**

Modifications from roads

**Channel**  
Maximum 20 13
**4] BANK EROSION AND RIPARIAN ZONE** Check ONE in each category for **EACH BANK** (Or 2 per bank & average)

EROSION	RIPIARIAN WIDTH	FLOOD PLAIN QUALITY	
<input checked="" type="checkbox"/> NONE / LITTLE [3]	<input type="checkbox"/> WIDE > 50m [4]	<input checked="" type="checkbox"/> FOREST, SWAMP [3]	<input type="checkbox"/> CONSERVATION TILLAGE [1]
<input type="checkbox"/> MODERATE [2]	<input checked="" type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]	<input type="checkbox"/> URBAN OR INDUSTRIAL [0]
<input type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input checked="" type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> MINING / CONSTRUCTION [0]
	<input type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> FENCED PASTURE [1]	
	<input type="checkbox"/> NONE [0]	<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]	

**Comments**

Indicate predominant land use(s) past 100m riparian.

**Riparian**  
Maximum 10 8
**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 &amp; average)

☒ POOL WIDTH > RIFFLE WIDTH [2]  
☐ POOL WIDTH = RIFFLE WIDTH [1]  
☐ POOL WIDTH < RIFFLE WIDTH [0]

**CURRENT VELOCITY**

Check ALL that apply

☐ TORRENTIAL [-1] ☒ SLOW [1]  
☐ VERY FAST [1] ☐ INTERSTITIAL [-1]  
☐ FAST [1] ☐ INTERMITTENT [-2]  
☒ MODERATE [1] ☐ EDDIES [1]

Indicate for reach - pools and riffles.

**Recreation Potential**
**Primary Contact**
**Secondary Contact**

(circle one and comment on back)

**Comments**
**Pool / Current**  
Maximum 12 6

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 &amp; average).

☐ NO RIFFLE [metric=0]

**RIFFLE DEPTH**
**RUN DEPTH**
**RIFFLE / RUN SUBSTRATE**
**RIFFLE / RUN EMBEDDEDNESS**
☐ BEST AREAS > 10cm [2]  
☒ BEST AREAS 5-10cm [1]  
☐ BEST AREAS < 5cm [metric=0]

☐ MAXIMUM > 50cm [2]  
☒ MAXIMUM < 50cm [1]

☒ STABLE (e.g., Cobble, Boulder) [2]  
☐ MOD. STABLE (e.g., Large Gravel) [1]  
☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]

☐ NONE [2]  
☐ LOW [1]  
☒ MODERATE [0]  
☐ EXTENSIVE [-1]

**Comments**
**Riffle / Run**  
Maximum 8 4
**6] GRADIENT** ( 34.4 ft/mi)  
**DRAINAGE AREA** ( 9.4 mi<sup>2</sup>)

☐ VERY LOW - LOW [2-4]  
☒ MODERATE [6-10]  
☐ HIGH - VERY HIGH [10-6]

**%POOL:** 30 **%GLIDE:**    
**%RUN:** 10 **%RIFFLE:** 60

**Gradient**  
Maximum 10 4



### AJ SAMPLED REACH

Check ALL that apply

#### METHOD

- ☐ BOAT  
☐ WADE  
☐ L. LINE  
☒ OTHER

#### DISTANCE

- ☐ 0.5 Km  
☐ 0.2 Km  
☐ 0.15 Km  
☐ 0.12 Km  
☒ OTHER

200 feet

#### CANOPY

- ☐ > 85% - OPEN  
☐ 55% - < 85%  
☒ 30% - < 55%  
☐ 10% - < 30%  
☐ < 10% - CLOSED

#### STAGE

1st - sample pass - 2nd

- ☐ HIGH  
☐ UP  
☒ NORMAL  
☐ LOW  
☐ DRY

#### CLARITY

1st - sample pass - 2nd

- ☒ < 20 cm  
☐ 20 - < 40 cm  
☐ 40 - 70 cm  
☐ > 70 cm / CTB  
☐ SECCHI DEPTH

1st - sample pass - 2nd

cm

cm

#### CJ REC

Comment RE: Reach consistency/ Is reach typical of steam?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

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.

#### BJ 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: ☐ > 100ft/ ☐ > 3ft

#### DJ MAINTENANCE

- ☐ 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

Circle some & COMMENT

#### EJ 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<sub>2</sub>O / TILE / H<sub>2</sub>O TABLE  
☐ ACID / MINE / QUARRY / FLOW  
☐ NATURAL / ☒ WETLAND / STAGNANT  
☐ PARK / GOLF / LAWN / HOME  
☐ ATMOSPHERE / DATA PAUCITY

#### FJ MEASUREMENTS

- $\bar{x}$  width 30 feet  
 $\bar{x}$  depth 18 inch.  
max. depth 20 inch  
 $\bar{x}$  bankfull width 30 feet  
bankfull  $\bar{x}$  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:







## Primary Headwater Habitat Evaluation Form

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HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION FE Lincoln Park-Riverbend 138kV Transmission Line

SITE NUMBER N/A

RIVER BASIN Dry Run - Mahoni

DRAINAGE AREA (mi<sup>2</sup>) 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 PWH Streams" for Instructions

STREAM CHANNEL ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY  
 MODIFICATIONS: 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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="text" value="0"/>	<input checked="" type="checkbox"/> SILT [3 pt]	<input type="text" value="35"/>
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="text" value="0"/>	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="text" value="10"/>
<input type="checkbox"/> BEDROCK [16 pt]	<input type="text" value="0"/>	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="text" value="10"/>
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="text" value="10"/>	<input checked="" type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="text" value="25"/>
<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="text" value="10"/>	<input type="checkbox"/> MUCK [0 pts]	<input type="text" value="0"/>
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="text" value="0"/>	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="text" value="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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input checked="" type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS Owlm 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):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (<= 3' 3") [5 pts]
<input type="checkbox"/> > 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		FLOODPLAIN QUALITY			
L	R	L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)		Conservation Tillage	
Wide >10m		Mature Forest, Wetland		Urban or Industrial	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Open Pasture, Row Crop	
Moderate 5-10m		Immature Forest, Shrub or Old Field		Mining or Construction	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Narrow <5m		Residential, Park, New Field			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
None		Fenced Pasture			

COMMENTS

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input checked="" type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input checked="" type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

## STREAM GRADIENT ESTIMATE

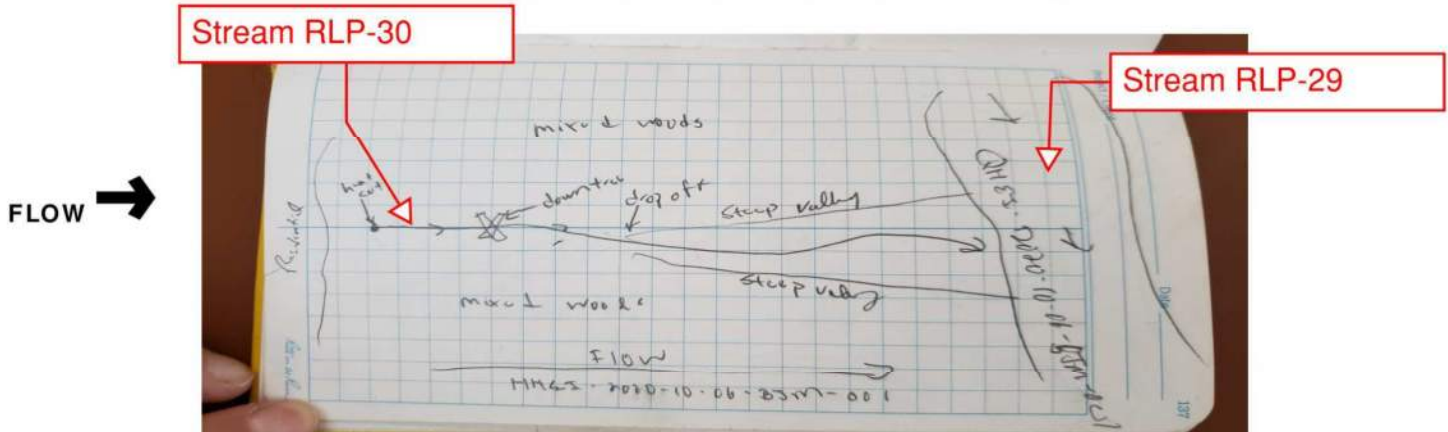
☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☒ Moderate to Severe ☐ Severe (10 ft/100 ft)

**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)**

<input checked="" type="checkbox"/> WWH Name: <u>Dry Run</u>	Distance from Evaluated Stream	<u>0.01</u>
<input type="checkbox"/> CWH Name: <input type="text"/>	Distance from Evaluated Stream	<input type="text"/>
<input type="checkbox"/> EWH Name: <input type="text"/>	Distance from Evaluated Stream	<input type="text"/>

**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







## Primary Headwater Habitat Evaluation Form

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HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION FE Lincoln Park-Riverbend 138kV Transmission Line

SITE NUMBER N/A

RIVER BASIN Dry Run - Mahoni

DRAINAGE AREA (mi<sup>2</sup>)

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

☐ NONE / NATURAL CHANNEL
 ☐ RECOVERED
 ☒ RECOVERING
 ☐ RECENT OR NO RECOVERY

## MODIFICATIONS:

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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="text" value="0"/>	<input checked="" type="checkbox"/> SILT [3 pt]	<input type="text" value="40"/>
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="text" value="0"/>	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="text" value="20"/>
<input type="checkbox"/> BEDROCK [16 pt]	<input type="text" value="0"/>	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="text" value="10"/>
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="text" value="0"/>	<input checked="" type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="text" value="30"/>
<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="text" value="0"/>	<input type="checkbox"/> MUCK [0 pts]	<input type="text" value="0"/>
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="text" value="0"/>	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="text" value="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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input checked="" type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS Owlm 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):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (<= 3' 3") [5 pts]
<input type="checkbox"/> > 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		FLOODPLAIN QUALITY			
L	R	L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)		Conservation Tillage	
Wide >10m		Mature Forest, Wetland		Urban or Industrial	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Moderate 5-10m		Immature Forest, Shrub or Old Field		Open Pasture, Row Crop	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Narrow <5m		Residential, Park, New Field		Mining or Construction	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
None		Fenced Pasture			

COMMENTS

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input checked="" type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input checked="" type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >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**

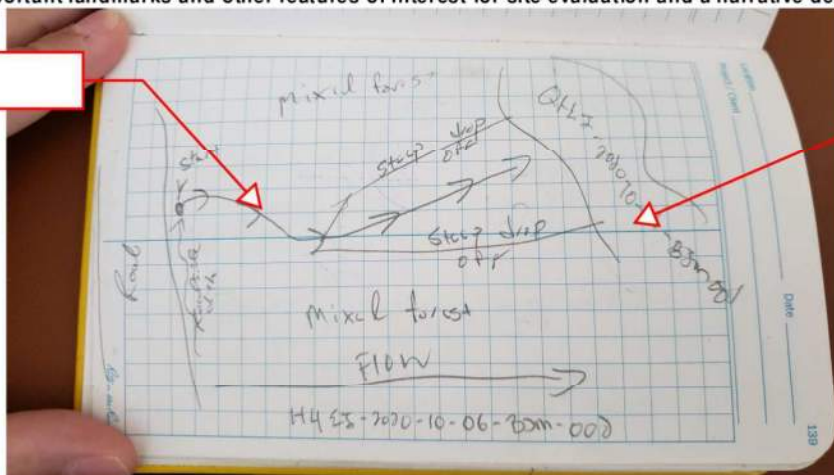
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  
Fish Observed? (Y/N): N Voucher? (Y/N): N Salamanders Observed? (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

Stream RLP-31

FLOW →



Stream RLP-29



## Primary Headwater Habitat Evaluation Form

15

HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION FE Lincoln Park-Riverbend 138kV Transmission Line

SITE NUMBER N/A

RIVER BASIN Dry Run - Mahoni

DRAINAGE AREA (mi<sup>2</sup>) 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 ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY  
 MODIFICATIONS: 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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="text" value="0"/>	<input checked="" type="checkbox"/> SILT [3 pt]	<input type="text" value="40"/>
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="text" value="0"/>	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="text" value="20"/>
<input type="checkbox"/> BEDROCK [16 pt]	<input type="text" value="0"/>	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="text" value="0"/>
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="text" value="0"/>	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="text" value="10"/>
<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="text" value="0"/>	<input type="checkbox"/> MUCK [0 pts]	<input type="text" value="0"/>
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="text" value="0"/>	<input checked="" type="checkbox"/> ARTIFICIAL [3 pts]	<input type="text" value="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  
PointsSubstrate  
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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input checked="" type="checkbox"/> 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):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (<= 3' 3") [5 pts]
<input type="checkbox"/> > 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		FLOODPLAIN QUALITY			
L	R	L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)			
Wide >10m		Mature Forest, Wetland			Conservation Tillage
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Immature Forest, Shrub or Old Field			Urban or Industrial
Moderate 5-10m		Residential, Park, New Field			Open Pasture, Row Crop
<input type="checkbox"/>	<input type="checkbox"/>	Fenced Pasture			Mining or Construction
Narrow <5m					
<input type="checkbox"/>	<input type="checkbox"/>				
None					

COMMENTS

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input checked="" type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input checked="" type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >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)



QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score  (If Yes, Attach Completed QHEI Form)

<input checked="" type="checkbox"/>	WWH Name:	Dry Run	Distance from Evaluated Stream	0.01
<input type="checkbox"/>	CWH Name:		Distance from Evaluated Stream	
<input type="checkbox"/>	EWH Name:		Distance from Evaluated Stream	

USGS Quadrangle Name: **Campbell** NRCS Soil Map Page: **1** NRCS Soil Map Stream Order: **1**

County: **Mahoning** Township / City: **T2N R1W**

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:

Performed? (Y/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)  Voucher? (Y/N)  Salamanders Observed? (Y/N)  Voucher? (Y/N)

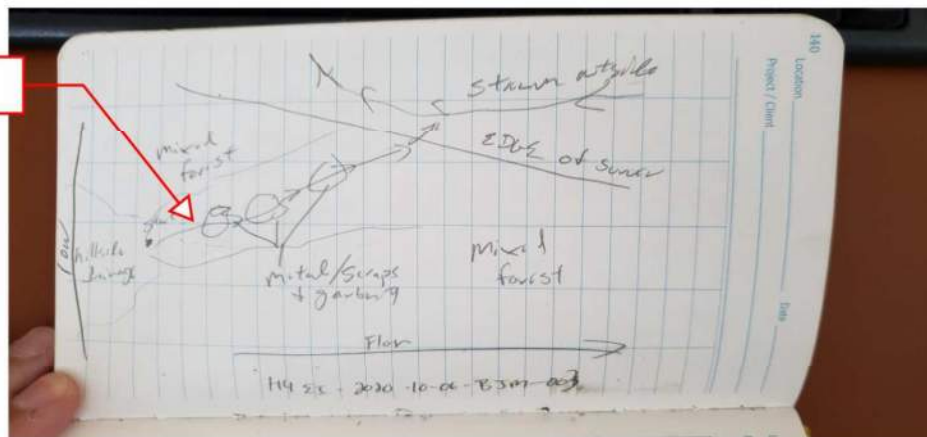
Frogs or Tadpoles Observed? (Y/N)  Voucher? (Y/N)  Aquatic Macroinvertebrates Observed? (Y/N)  Voucher? (Y/N)

Comments Regarding Biology: \_\_\_\_\_

**Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location**

## Stream RLP-32

## FLOW







## Primary Headwater Habitat Evaluation Form

14

HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION FE Lincoln Park-Riverbend 138kV Transmission Line

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 PWH Streams" for Instructions

STREAM CHANNEL ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY  
 MODIFICATIONS: 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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="text" value="0"/>	<input checked="" type="checkbox"/> SILT [3 pt]	<input type="text" value="40"/>
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="text" value="0"/>	<input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="text" value="50"/>
<input type="checkbox"/> BEDROCK [16 pt]	<input type="text" value="0"/>	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="text" value="0"/>
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="text" value="0"/>	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="text" value="10"/>
<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="text" value="0"/>	<input type="checkbox"/> MUCK [0 pts]	<input type="text" value="0"/>
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="text" value="0"/>	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="text" value="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  
PointsSubstrate  
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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input checked="" type="checkbox"/> 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):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (<= 3' 3") [5 pts]
<input type="checkbox"/> > 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		FLOODPLAIN QUALITY			
L	R	L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(Per Bank)		(Most Predominant per Bank)		Conservation Tillage	
Wide >10m		Mature Forest, Wetland		Urban or Industrial	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Open Pasture, Row Crop	
Moderate 5-10m		Immature Forest, Shrub or Old Field		Mining or Construction	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Narrow <5m		Residential, Park, New Field			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
None		Fenced Pasture			

COMMENTS

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input checked="" type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input checked="" type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >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

Stream RLP-33

FLOW →

Stream RLP-34







## Primary Headwater Habitat Evaluation Form

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HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION FE Lincoln Park-Riverbend 138kV Transmission Line

SITE NUMBER N/A

RIVER BASIN Dry Run - Mahoni

DRAINAGE AREA (mi<sup>2</sup>) 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 PWH Streams" for Instructions

STREAM CHANNEL ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY  
 MODIFICATIONS: 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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="text" value="0"/>	<input checked="" type="checkbox"/> SILT [3 pt]	<input type="text" value="40"/>
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="text" value="0"/>	<input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="text" value="45"/>
<input type="checkbox"/> BEDROCK [16 pt]	<input type="text" value="0"/>	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="text" value="0"/>
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="text" value="0"/>	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="text" value="10"/>
<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="text" value="0"/>	<input type="checkbox"/> MUCK [0 pts]	<input type="text" value="0"/>
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="text" value="0"/>	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="text" value="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  
PointsSubstrate  
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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input checked="" type="checkbox"/> 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):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (<= 3' 3") [5 pts]
<input type="checkbox"/> > 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		FLOODPLAIN QUALITY			
L	R	L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	(Per Bank)		(Most Predominant per Bank)		Conservation Tillage
<input checked="" type="checkbox"/>	Wide >10m	<input checked="" type="checkbox"/>	Mature Forest, Wetland	<input type="checkbox"/>	Urban or Industrial
<input checked="" type="checkbox"/>	Moderate 5-10m	<input checked="" type="checkbox"/>	Immature Forest, Shrub or Old Field	<input type="checkbox"/>	Open Pasture, Row Crop
<input type="checkbox"/>	Narrow <5m	<input type="checkbox"/>	Residential, Park, New Field	<input type="checkbox"/>	Mining or Construction
<input type="checkbox"/>	None	<input type="checkbox"/>	Fenced Pasture	<input type="checkbox"/>	

COMMENTS

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input checked="" type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input checked="" type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >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)**

<input checked="" type="checkbox"/> WWH Name: <u>Dry Run</u>	Distance from Evaluated Stream	<u>0.01</u>
<input type="checkbox"/> CWH Name: <input type="text"/>	Distance from Evaluated Stream	<input type="text"/>
<input type="checkbox"/> EWH Name: <input type="text"/>	Distance from Evaluated Stream	<input type="text"/>

**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: 0.56Photograph Information: See Appendix DElevated 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) NComments 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-33

FLOW →

Stream RLP-34





## Primary Headwater Habitat Evaluation Form

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HHEI Score (sum of metrics 1, 2, 3) :

SITE NAME/LOCATION FE Lincoln Park-Riverbend 138kV Transmission Line

SITE NUMBER N/A

RIVER BASIN Dry Run - Mahoni

DRAINAGE AREA (mi<sup>2</sup>) 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 ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY  
 MODIFICATIONS: 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
<input type="checkbox"/> BLDR SLABS [16 pts]	<input type="text" value="0"/>	<input checked="" type="checkbox"/> SILT [3 pt]	<input type="text" value="35"/>
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<input type="text" value="0"/>	<input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<input type="text" value="40"/>
<input type="checkbox"/> BEDROCK [16 pt]	<input type="text" value="0"/>	<input type="checkbox"/> FINE DETRITUS [3 pts]	<input type="text" value="0"/>
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<input type="text" value="5"/>	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<input type="text" value="10"/>
<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<input type="text" value="5"/>	<input type="checkbox"/> MUCK [0 pts]	<input type="text" value="0"/>
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<input type="text" value="0"/>	<input type="checkbox"/> ARTIFICIAL [3 pts]	<input type="text" value="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):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input checked="" type="checkbox"/> 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):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (<= 3' 3") [5 pts]
<input type="checkbox"/> > 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		FLOODPLAIN QUALITY		
L	R	L	R	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Conservation Tillage
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Urban or Industrial
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Open Pasture, Row Crop
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Mining or Construction

COMMENTS

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input checked="" type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input checked="" type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >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:

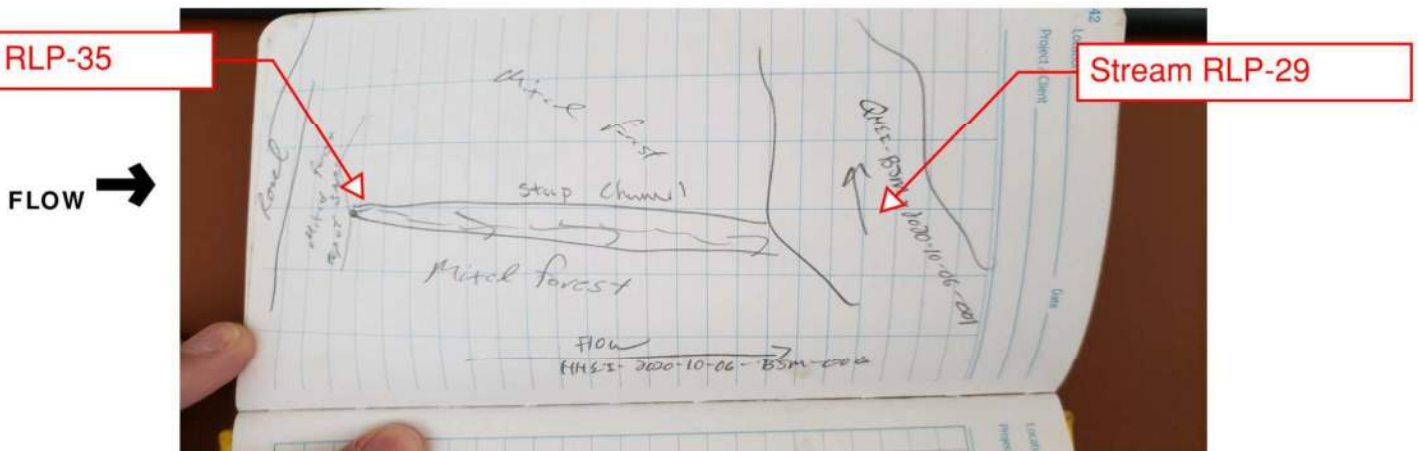
Additional comments/description of pollution impacts:

**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





## **APPENDIX D**

### **REPRESENTATIVE STREAMS AND WETLANDS PHOTOGRAPHS**

**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 8, 2020

**Description:**

Wetland RLP-01

PEM wetland

Category 1



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 6, 2020

**Description:**

Wetland RLP-02

PFO wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Wetland RLP-03

PSS wetland

Category 1



Facing North



Facing East



Facing South



Facing West



Soil Pit

**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Wetland RLP-04

PEM wetland

Category 1



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Wetland RLP-05

PEM wetland

Category 1



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Wetland RLP-06

PSS wetland

Category 1



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Wetland RLP-07

PSS wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Wetland RLP-08a

PEM wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Wetland RLP-08b

PFO wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 8, 2020

**Description:**

Wetland RLP-09a

PSS wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 8, 2020

**Description:**

Wetland RLP-09b

PEM wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 8, 2020

**Description:**

Wetland RLP-10

PSS wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Wetland RLP-11

PEM wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Wetland RLP-12

PEM wetland

Category 1



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 6, 2020

**Description:**

Wetland RLP-13

PSS wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Wetland RLP-14

PFO wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Wetland RLP-15a

PEM wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Wetland RLP-15b

PSS wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 6, 2020

**Description:**

Wetland RLP-16a

PFO wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 6, 2020

**Description:**

Wetland RLP-16b

PSS wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 6, 2020

**Description:**

Wetland RLP-16c

PSS wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Wetland RLP-17a

PEM wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Wetland RLP-17b

PSS wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Wetland RLP-17c

PFO wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Wetland RLP-18a

PFO wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Wetland RLP-18b

PEM wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Wetland RLP-19a

PSS wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Wetland RLP-19b

PFO wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Wetland RLP-20

PFO wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Wetland RLP-21a

PEM wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Wetland RLP-21b

PFO wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Wetland RLP-22

PEM wetland

Category 1



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Wetland RLP-23

PEM wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Wetland RLP-24

PEM wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Wetland RLP-25

PEM wetland

Category 1



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Wetland RLP-26

PEM wetland

Category 1



Facing North



Facing East



Facing South



Facing West



Soil Pit

**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Wetland RLP-27

PEM wetland

Category 1



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

August 20, 2020

**Description:**

Wetland RLP-28

PFO wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

October 6, 2020

**Description:**

Wetland RLP-29a

PSS wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

October 6, 2020

**Description:**

Wetland RLP-29b

PEM wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

October 6, 2020

**Description:**

Wetland RLP-30

PEM wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

October 6, 2020

**Description:**

Wetland RLP-31

PEM wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

October 6, 2020

**Description:**

Wetland RLP-32

PFO wetland

Category 2



Facing North



Facing East



Facing South



Facing West



Soil Pit

**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 6, 2020

**Description:**

Stream RLP-01

Perennial

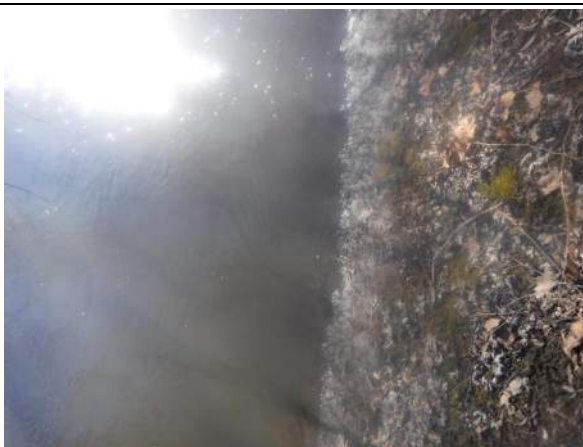
Warmwater  
Habitat



Facing Upstream



Facing Downstream



Substrate



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 8, 2020

**Description:**

Stream RLP-02

Perennial

Warmwater  
Habitat



Facing Upstream



Facing Downstream



Substrate

**Client Name:**American Transmission Systems,  
Incorporated**Site Location:**Lincoln Park-Riverbend 138 kV Transmission Line  
Project**Project No.**

60595883

**Date:**

January 8, 2020

**Description:**

Stream RLP-03

Ephemeral

Modified Class 1



Facing Upstream



Facing Downstream



Substrate

**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 8, 2020

**Description:**

Stream RLP-04

Perennial

Coldwater  
Habitat



Facing Upstream



Facing Downstream



Substrate



**Client Name:**American Transmission Systems,  
Incorporated**Site Location:**Lincoln Park-Riverbend 138 kV Transmission Line  
Project**Project No.**

60595883

**Date:**

January 8, 2020

**Description:**

Stream RLP-05

Intermittent

Modified Class 2



Facing Upstream



Facing Downstream



Substrate

**Client Name:**American Transmission Systems,  
Incorporated**Site Location:**Lincoln Park-Riverbend 138 kV Transmission Line  
Project**Project No.**

60595883

**Date:**

January 8, 2020

**Description:**

Stream RLP-06

Ephemeral

Modified Class 1



Facing Upstream



Facing Downstream



Substrate



**Client Name:**American Transmission Systems,  
Incorporated**Site Location:**Lincoln Park-Riverbend 138 kV Transmission Line  
Project**Project No.**

60595883

**Date:**

January 8, 2020

**Description:**

Stream RLP-07

Ephemeral

Class 1



Facing Upstream



Facing Downstream



Substrate



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 8, 2020

**Description:**

Stream RLP-08

Ephemeral

Class 1



Facing Upstream



Facing Downstream



Substrate

**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 8, 2020

**Description:**

Stream RLP-09

Ephemeral

Modified  
Class 1



Facing Upstream



Facing Downstream



Substrate



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 6, 2020

**Description:**

Stream RLP-10

Intermittent

Modified Class 2



Facing Upstream



Facing Downstream



Substrate



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 6, 2020

**Description:**

Stream RLP-11

Ephemeral

Modified Class 1



Facing Upstream



Facing Downstream



Substrate



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 6, 2020

**Description:**

Stream RLP-12

Ephemeral

Modified Class 1



Facing Upstream



Facing Downstream



Substrate

**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 6, 2020

**Description:**

Stream RLP-13

Perennial

Modified Class 2



Facing Upstream



Facing Downstream



Substrate



**Client Name:**American Transmission Systems,  
Incorporated**Site Location:**Lincoln Park-Riverbend 138 kV Transmission Line  
Project**Project No.**

60595883

**Date:**

January 6, 2020

**Description:**

Stream RLP-14

Intermittent

Modified Class 2



Facing Upstream



Facing Downstream



Substrate

**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Stream RLP-15

Intermittent

Modified Class 2



Facing Upstream



Facing Downstream



Substrate



**Client Name:**American Transmission Systems,  
Incorporated**Site Location:**Lincoln Park-Riverbend 138 kV Transmission Line  
Project**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Stream RLP-16

Intermittent

Modified Class 1



Facing Upstream



Facing Downstream



Substrate



**Client Name:**American Transmission Systems,  
Incorporated**Site Location:**Lincoln Park-Riverbend 138 kV Transmission Line  
Project**Project No.**

60595883

**Date:**

January 8, 2020

**Description:**

Stream RLP-17

Intermittent

Modified Class 2



Facing Upstream



Facing Downstream



Substrate

**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Stream RLP-18

Intermittent

Modified Class 1



Facing Upstream



Facing Downstream



Substrate



**Client Name:**American Transmission Systems,  
Incorporated**Site Location:**Lincoln Park-Riverbend 138 kV Transmission Line  
Project**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Stream RLP-19

Ephemeral

Modified Class 1



Facing Upstream



Facing Downstream



Substrate



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Stream RLP-20

Perennial

Modified Class 2



Facing Upstream



Facing Downstream



Substrate

**Client Name:**American Transmission Systems,  
Incorporated**Site Location:**Lincoln Park-Riverbend 138 kV Transmission Line  
Project**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Stream RLP-21

Intermittent

Modified Class 1



Facing Upstream



Facing Downstream



Substrate

**Client Name:**American Transmission Systems,  
Incorporated**Site Location:**Lincoln Park-Riverbend 138 kV Transmission Line  
Project**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Stream RLP-22

Ephemeral

Modified Class 1



Facing Upstream



Facing Downstream



Substrate



**Client Name:**American Transmission Systems,  
Incorporated**Site Location:**Lincoln Park-Riverbend 138 kV Transmission Line  
Project**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Stream RLP-23

Intermittent

Class 1



Facing Upstream



Facing Downstream



Substrate

**Client Name:**American Transmission Systems,  
Incorporated**Site Location:**Lincoln Park-Riverbend 138 kV Transmission Line  
Project**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Stream RLP-24

Ephemeral

Class 1



Facing Upstream



Facing Downstream



Substrate

**Client Name:**American Transmission Systems,  
Incorporated**Site Location:**Lincoln Park-Riverbend 138 kV Transmission Line  
Project**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Stream RLP-25

Ephemeral

Class 1



Facing Upstream



Facing Downstream



Substrate



**Client Name:**American Transmission Systems,  
Incorporated**Site Location:**Lincoln Park-Riverbend 138 kV Transmission Line  
Project**Project No.**

60595883

**Date:**

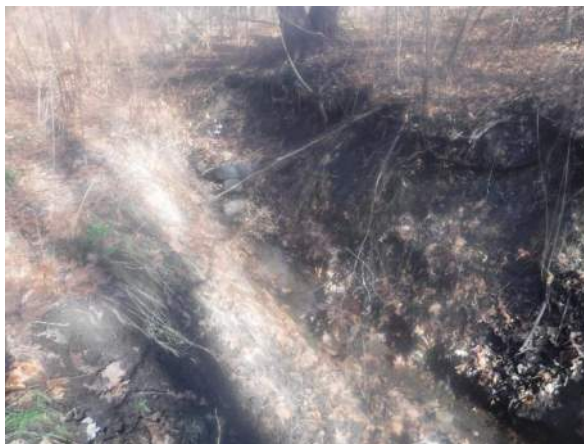
January 7, 2020

**Description:**

Stream RLP-26

Intermittent

Modified Class 1



Facing Upstream



Facing Downstream



Substrate

**Client Name:**American Transmission Systems,  
Incorporated**Site Location:**Lincoln Park-Riverbend 138 kV Transmission Line  
Project**Project No.**

60595883

**Date:**

January 7, 2020

**Description:**

Stream RLP-27

Ephemeral

Class 1



Facing Upstream



Facing Downstream



Substrate



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

January 6, 2020

**Description:**

Stream RLP-28

Intermittent

Modified Class 1



Facing Upstream



Facing Downstream



Substrate



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

October 6, 2020

**Description:**

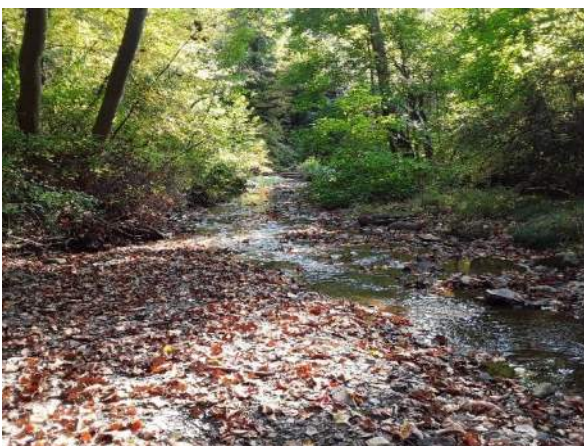
Stream RLP-29

Perennial

Good  
Warmwater



Facing Upstream



Facing Downstream



Substrate

**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

October 6, 2020

**Description:**

Stream RLP-30

Ephemeral

Modified Class 1



Facing Upstream



Facing Downstream



Substrate



**Client Name:**

American Transmission Systems,  
Incorporated

**Site Location:**

Lincoln Park-Riverbend 138 kV Transmission Line  
Project

**Project No.**

60595883

**Date:**

October 6, 2020

**Description:**

Stream RLP-31

Ephemeral

Modified Class 1



Facing Upstream



Facing Downstream



Substrate



**Client Name:**American Transmission Systems,  
Incorporated**Site Location:**Lincoln Park-Riverbend 138 kV Transmission Line  
Project**Project No.**

60595883

**Date:**

October 6, 2020

**Description:**

Stream RLP-32

Ephemeral

Modified Class 1



Facing Upstream



Facing Downstream



Substrate

**Client Name:**American Transmission Systems,  
Incorporated**Site Location:**Lincoln Park-Riverbend 138 kV Transmission Line  
Project**Project No.**

60595883

**Date:**

October 6, 2020

**Description:**

Stream RLP-33

Ephemeral

Modified Class 1



Facing Upstream



Facing Downstream



Substrate



**Client Name:**American Transmission Systems,  
Incorporated**Site Location:**Lincoln Park-Riverbend 138 kV Transmission Line  
Project**Project No.**

60595883

**Date:**

October 6, 2020

**Description:**

Stream RLP-34

Ephemeral

Modified Class 1



Facing Upstream



Facing Downstream



Substrate



**Client Name:**American Transmission Systems,  
Incorporated**Site Location:**Lincoln Park-Riverbend 138 kV Transmission Line  
Project**Project No.**

60595883

**Date:**

October 6, 2020

**Description:**

Stream RLP-35

Ephemeral

Modified Class 1



Facing Upstream



Facing Downstream



Substrate