



Ohio Department of Natural Resources

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January 19, 2018

Jason Tucker
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 525 Vine Street, Suite 1800
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Re: 18-016; Silflex 138 kV Transmission Line Extension Project

Project: The proposed project involves the extension of the existing East Springfield-London Number 1 and 2 138 kV transmission lines to loop through a new customer substation.

Location: The proposed project is located in Springfield Township, Clark County, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Natural Heritage Database: The Natural Heritage Database has the following records at or within a one-mile radius of the project area.

Yellow sedge (*Carex flava*), P
 Prairie rattlesnake-root (*Nabulus racemosus*), P
 Blue-leaved willow (*Salix myricoides*), P
 Prairie fen plant community
 Redmond Fen Conservation Site

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although all types of plant communities have been surveyed, we only maintain records on the highest quality areas.

The review was performed on the project area you specified in your request as well as an additional one-mile radius. Records searched date from 1980. This information is provided to inform you of features present within your project area and vicinity. Additional comments on some of the features may be found in pertinent sections below.

Statuses are defined as: E = state endangered; T = state threatened; P = state potentially threatened; SC = state species of concern; SI = state special interest; A = species recently added to state inventory, status not yet determined; X = presumed extirpated in Ohio; FE = federal endangered, FT = federal threatened, FSC = federal species of concern, FC = federal candidate species.

Fish and Wildlife: The Division of Wildlife (DOW) has the following comments.

The DOW recommends that impacts to streams, wetlands and other water resources be avoided and minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation.

The project is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species. The following species of trees have relatively high value as potential Indiana bat roost trees: shagbark hickory (*Carya ovata*), shellbark hickory (*Carya laciniosa*), bitternut hickory (*Carya cordiformis*), black ash (*Fraxinus nigra*), green ash (*Fraxinus pennsylvanica*), white ash (*Fraxinus americana*), shingle oak (*Quercus imbricaria*), northern red oak (*Quercus rubra*), slippery elm (*Ulmus rubra*), American elm (*Ulmus americana*), eastern cottonwood (*Populus deltoides*), silver maple (*Acer saccharinum*), sassafras (*Sassafras albidum*), post oak (*Quercus stellata*), and white oak (*Quercus alba*). Indiana bat roost trees consists of trees that include dead and dying trees with exfoliating bark, crevices, or cavities in upland areas or riparian corridors and living trees with exfoliating bark, cavities, or hollow areas formed from broken branches or tops. However, Indiana bats are also dependent on the forest structure surrounding roost trees. If suitable habitat occurs within the project area, the DOW recommends trees be conserved. If suitable habitat occurs within the project area and trees must be cut, the DOW recommends cutting occur between October 1 and March 31. If suitable trees must be cut during the summer months, the DOW recommends a net survey be conducted between June 1 and August 15, prior to any cutting. Net surveys should incorporate either nine net nights per square 0.5 kilometer of project area, or four net nights per kilometer for linear projects. If no tree removal is proposed, this project is not likely to impact this species.

The project is within the range of the rayed bean (*Villosa fabalis*), a state endangered and federally endangered mussel, and the snuffbox (*Epioblasma triquetra*), a state endangered and federally endangered mussel. Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this project is not likely to impact these species.

The project is within the range of the Iowa darter (*Etheostoma exile*), a state endangered fish, and the tongue-tied minnow (*Exoglossum laurae*), a state threatened fish. The DOW recommends no in-water work from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed, this project is not likely to impact these or other aquatic species.

The project is within the range of the spotted turtle (*Clemmys guttata*), a state threatened species. This species prefers fens, bogs and marshes, but is also known to inhabit wet prairies, meadows, pond edges, wet woods, and the shallow sluggish waters of small streams and ditches. Due to the location, the type of habitat present at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the eastern massasauga (*Sistrurus catenatus*), a state endangered and a federally threatened snake species. The eastern massasauga uses a range of habitats including wet prairies, fens, and other wetlands, as well as drier upland habitat. Due to

the location, the type of habitat present at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the Kirtland's snake (*Clonophis kirtlandii*), a state threatened species. This secretive species prefers wet meadows and other wetlands. Due to the location, the type of habitat present at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the upland sandpiper (*Bartramia longicauda*), a state endangered bird. Nesting upland sandpipers utilize dry grasslands including native grasslands, seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through the Conservation Reserve Program (CRP). If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 to July 31. If this type of habitat will not be impacted, this project is not likely to impact this species.

Due to the potential of impacts to federally listed species, as well as to state listed species, we recommend that this project be coordinated with the U.S. Fish & Wildlife Service.

Water Resources: The Division of Water Resources has the following comment.

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project. Your local floodplain administrator contact information can be found at the website below.

http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List_8_16.pdf

ODNR appreciates the opportunity to provide these comments. Please contact John Kessler at (614) 265-6621 if you have questions about these comments or need additional information.

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Tucker, Jason

From: susan_zimmermann@fws.gov on behalf of Ohio, FW3 <ohio@fws.gov>
Sent: Tuesday, December 19, 2017 2:20 PM
To: Tucker, Jason
Cc: nathan.reardon@dnr.state.oh.us; kate.parsons@dnr.state.oh.us; betsey.ewoldt@aecom.com
Subject: Silflex 138 kV Transmission Line Extension Project, Clark Co.



UNITED STATES DEPARTMENT OF THE INTERIOR
 U.S. Fish and Wildlife Service
 Ecological Services Office
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 Columbus, Ohio 43230
 (614) 416-8993 / Fax (614) 416-8994



TAILS# 03E15000-2018-TA-0339

Dear Mr. Tucker,

We have received your recent correspondence requesting information about the subject proposal. There are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. The following comments and recommendations will assist you in fulfilling the requirements for consultation under section 7 of the Endangered Species Act of 1973, as amended (ESA).

The U.S. Fish and Wildlife Service (Service) recommends that proposed developments avoid and minimize water quality impacts and impacts to high quality fish and wildlife habitat (e.g., forests, streams, wetlands). Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. All disturbed areas should be mulched and revegetated with native plant species. Prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

FEDERALLY LISTED SPECIES COMMENTS: All projects in the State of Ohio lie within the range of the federally endangered **Indiana bat** (*Myotis sodalis*) and the federally threatened **northern long-eared bat** (*Myotis septentrionalis*). In Ohio, presence of the Indiana bat and northern long-eared bat is assumed wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥ 3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves and abandoned mines.

Should the proposed site contain trees ≥ 3 inches dbh, we recommend that trees be saved wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees ≥ 3 inches dbh cannot be avoided, we recommend that removal of any trees ≥ 3 inches dbh only occur between October 1 and March 31. Seasonal clearing is being recommended to avoid adverse effects to Indiana bats and northern long-eared bats. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see <http://www.fws.gov/midwest/endangered/mammals/nleib/index.html>), incidental take of Indiana bats is still prohibited without a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are assumed present.

If implementation of this seasonal tree cutting recommendation is not possible, summer surveys may be conducted to document the presence or probable absence of Indiana bats within the project area during the summer. If a summer survey documents probable absence of Indiana bats, the 4(d) rule for the northern long-eared bat could be applied. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Endangered Species Coordinator for this office. Surveyors must have a valid federal permit. Please note that summer surveys may only be conducted between June 1 and August 15.

If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. We recommend that the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, proposed, or candidate species. Should the project design change, or during the term of this action, additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the Service should be initiated to assess any potential impacts.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the ESA, and are consistent with the intent of the National Environmental Policy Act of 1969 and the Service's Mitigation Policy. This letter provides technical assistance only and does not serve as a completed section 7 consultation document. We recommend that the project be coordinated with the Ohio Department of Natural Resources due to the potential for the project to affect state listed species and/or state lands. Contact John Kessler, Environmental Services Administrator, at (614) 265-6621 or at john.kessler@dnr.state.oh.us.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Dan Everson".

Dan Everson
Field Supervisor

cc: Nathan Reardon, ODNR-DOW
Kate Parsons, ODNR-DOW

**East Springfield-London #2 138 kV Transmission Line Extensions to North
Titus Substation Project
Case Number 18-0086-EL-BLN**

Date: February 1, 2018

**Exhibit 13
Wetland Delineation And Stream Assessment Report**

EAST SPRINGFIELD-LONDON #2 138 KV TRANSMISSION LINE EXTENSTIONS TO NORTH TITUS SUBSTATION PROJECT

WETLAND DELINEATION AND STREAM ASSESSMENT REPORT

Prepared for:
American Transmission Systems, Inc.
a FirstEnergy Company
76 South Main Street
Akron, Ohio 44308



525 Vine Street, Suite 1800
Cincinnati, Ohio 45202

January 2018

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LIST OF ACRONYMS and ABBREVIATIONS

DBH	Diameter at Breast Height
EPA	Environmental Protection Agency
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
OBL	Obligate wetland
OHWM	Ordinary high water mark
ORAM	Ohio Rapid Assessment Method
PEM	Palustrine emergent
PHWH	Primary Headwater Habitat
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

1.0 INTRODUCTION

American Transmission Systems, Inc. (ATSI), a FirstEnergy Company (FirstEnergy) is proposing to build the East Springfield-London #2 138 kV Transmission Line Extensions to North Titus Substation Project (Project) in the City of Springfield and Springfield Township, Clark County, Ohio. In this Project, ATSI is proposing to extend two segments of the East Springfield-London #2 138 kV Transmission Line to the new North Titus Substation creating two new lines. These lines will be an approximately 1.0-mile-long East Springfield-North Titus 138 kV Transmission Line and an approximately 0.6-mile-long London-North Titus 138 kV Transmission Line. The Project is needed for Silfex Inc.'s (Silfex) new manufacturing facility located at 1000 Titus Road in the City of Springfield, Ohio. The Project location is shown on Figure 1.

Land uses crossed by the Project survey corridor 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. General land use types in the vicinity of the proposed Project include: agricultural, commercial lots, wetlands, wooded lots, and maintained transmission line right-of-way (ROW). Commercial lots are the dominant land use in the vicinity of the Project.

2.0 METHODOLOGY

The purpose of the field survey was to assess whether wetlands and other “waters of the U.S.” exist within the Project’s proposed 200-foot wide ROW. 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.

On December 11 and 15, 2017, AECOM ecologists walked the Project survey corridor to conduct a wetland delineation and stream assessment. During the field survey, the physical boundaries of observed water features were recorded using sub-decimeter accurate Trimble Global Positioning System (GPS) units. The GPS data was imported into ArcMap GIS software, where the data was then reviewed and edited for accuracy.

2.1 WETLAND DELINEATION

The Project survey corridor was evaluated according to the procedures outlined in the U.S. Army Corps of Engineers (USACE) *1987 Wetland Delineation Manual (1987 Manual)* (Environmental

Laboratory, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) (Regional Supplement)* (USACE, 2010). 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. 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.

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 degree 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 obtained from the NRCS National Water and Climate Center reveals for Clark County that in an average year, this period lasts from April 15 to October 24, or 192 days. In the Project area, five percent of the growing season equates to approximately ten days.

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 the *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, 2010).

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 *2016 National Wetland Plant List: Midwest Region*, 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, 2010).

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). All identified wetlands within the survey corridor were classified as freshwater, Palustrine systems, which include non-tidal wetlands dominated by trees, shrubs, emergents, mosses, or lichens. Three palustrine wetland classifications are possible.

- **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 an overstory of broad-leaved and needle-leaved trees, an understory of young saplings and shrubs, and an herbaceous layer.

For some wetlands, multiple Cowardin classifications may be present where more than one classification's vegetation is dominant. Where multiple Cowardin classifications are present, the predominant Cowardin classification is listed first, and the less dominant classification will follow.

2.1.5 OHIO RAPID ASSESSMENT METHOD v. 5.0

The Ohio Environmental Protection Agency (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 v. 5.0 resulting in a score that describes the wetland using a range from 0 (low quality and high disturbance) to 100 (high quality and low disturbance). Wetlands scored from 0 to 29.9 are grouped into "Category 1", 30 to 59.9 are "Category 2" and 60 to 100 are "Category 3". Transitional zones exist between "Categories 1 and 2" from 30 to 34.9 and between "Categories 2 and 3" from 60 to 64.9. However, according to the 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 or 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 Evaluation Manual for Ohio’s Primary Headwater Habitat Streams, Version 3* (OEPA, 2012).

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 a 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 40 cm, 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 square miles) versus larger streams (L are those with a watershed area greater than 20 square miles). 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).

2.2.2 OEPA PRIMARY HEADWATER HABITAT EVALUATION INDEX

Headwater streams are typically considered to be first-order and second-order streams, meaning streams that have no upstream tributaries (or “branches”) and those that have only first-order tributaries, respectively. The stream order concept can be problematic when used to define headwater streams because stream-order designations vary depending upon the accuracy and resolution of the stream delineation. Headwater streams are generally not shown on USGS 7.5-minute topographic quadrangles and are sometimes difficult to distinguish on aerial photographs. Nevertheless, headwater streams are now recognized as useful monitoring units due to their abundance, widespread spatial scale and landscape position (Fritz, et al. 2006). Impacts to

headwater streams can have a cascading effect on the downstream water quality and habitat value. The headwater habitat evaluation index (HHEI) is a rapid field assessment method for physical habitat that can be used to appraise the biological potential of most Primary Headwater Habitat (PHWH) streams. The HHEI was developed using many of the same techniques as used for QHEI, but has criteria specifically designed for headwater habitats. To use HHEI, the stream must have a “defined bed and bank, with either continuous or periodically flowing water, with watershed area less than or equal to 1.0 mi² (259 ha), and a maximum depth of water pools equal to or less than 15.75 inches (40 cm)” (OEPA, 2012).

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 (OEPA, 2012). 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” (OEPA, 2012). 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" (OEPA, 2012). 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).

3.0 RESULTS

Within the Project survey corridor, AECOM delineated two wetlands, one stream, and one pond. These wetlands and other features are discussed in detail in the following sections.

3.1 WETLAND DELINEATION

3.1.1 Preliminary Soils Evaluation

Soils in each wetland were observed and documented as part of the delineation methodology. According to the USDA/NRCS Web Soil Surveys of Clark County, Ohio (NRCS 2017), and the NRCS Hydric Soils Lists of Ohio, 6 soil series are mapped within the Project survey corridor (NRCS 2017). Of those 6 soil series, 1 soil series contain soil map units that are listed with hydric components. Table 1 provides a detailed overview of all soil series and soil map units within the Project survey corridor. Soil map units located within the Project survey corridor are shown on Figures 2A-2D.

TABLE 1
SOIL MAP UNITS AND DESCRIPTIONS WITHIN THE EAST SPRINGFIELD-LONDON #2 138 KV TRANSMISSION LINE EXTENSIONS TO NORTH TITUS SUBSTATION PROJECT SURVEY CORRIDOR

Soil Series	Symbol	Map Unit Description	Topographic Setting	Hydric	Hydric Component (%)
Eldean	EmA	Eldean silt loam, 0 to 2 percent slopes	Flats	Not hydric	Lippincott (7%), Westland (6%)
Kokomo	Ko	Kokomo silty clay loam, 0 to 2 percent slopes	Depressions, till plains	Hydric	Kokomo (90%)
Miamian	MhB	Miamian silt loam, 2 to 6 percent slopes	Till plains on till plains	Not hydric	Brookston (5%)
	MhB2	Miamian silt loam, 2 to 6 percent slopes, eroded	Till plains	Not hydric	None
	MkD2	Miamian silty clay loam, 12 to 18 percent slopes, eroded	Till plains	Not hydric	None
	MmC3	Miamian clay loam, shallow to dense till substratum, 6 to 12 percent slopes, severely eroded	Till plains	Not hydric	Brookston (5%), Kokomo (5%)
	MmD3	Miamian clay loam, shallow to dense till substratum, 12 to 18 percent slopes, severely eroded	Till plains	Not hydric	None
Ockley	OcA	Ockley silt loam, Southern Ohio Till Plain, 0 to 2 percent slopes	Terraces	Not hydric	Westland (5%)
Thackery	ThA	Thackery silt loam, 0 to 2 percent slopes	Stream terraces	Not hydric	None
Waynetown	WrA	Waynetown silt loam, 0 to 2 percent slopes	Outwash plains	Not hydric	Drummer (10%)

NOTES:

(1) Data sources include:

USDA, NRCS. 2017 Web Soil Survey. Available online at: <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>

USDA, NRCS, 2018. National Hydric Soils List by State. Available online at: <http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/>

USDA, NRCS. 1999. Soil Survey of Clark County, Ohio.

3.1.2 National Wetland Inventory Map Review

National Wetland Inventory (NWI) wetlands are areas of potential wetland that have been identified from USFWS aerial photograph interpretation which have typically not been field verified. Forested and heavy scrub/shrub wetlands are often not shown on NWI maps as foliage effectively hides the visual signature that indicates the presence of standing water and moist soils from an aerial view. The USFWS website states that the NWI maps are not intended or designed for jurisdictional wetland identification or location. As a result, NWI maps do not show all the wetlands found in a particular area nor do they necessarily provide accurate wetland boundaries. NWI maps are useful for providing indications of potential wetland areas, which are often supported by soil mapping and hydrologic predictions, based upon topographical analysis using USGS topographic maps.

According to the NWI maps of the New Moorefield, Ohio quadrangle, the Project survey corridor contains two mapped NWI wetlands: one palustrine unconsolidated bottom, artificially flooded (PUBK), and one riverine, intermittent, stream bed, seasonally flooded (R4SBC) (USFWS, 2017). The two mapped wetlands were delineated in the field as Pond ESL-1 and Stream ESL-1. Locations of the NWI mapped wetlands are shown on Figure 2.

3.1.3 Delineated Wetlands

During the delineation, AECOM identified two wetlands at a total of 0.15 acre within the Project survey corridor.

The wetlands identified within the Project survey corridor consists of the PEM wetland habitat type. See Table 2 for a summary of the delineated wetland within the Project survey corridor.

TABLE 2
DELINEATED WETLANDS WITHIN THE EAST SPRINGFIELD-LONDON #2 138 KV TRANSMISSION LINE EXTENSIONS TO NORTH TITUS SUBSTATION PROJECT SURVEY CORRIDOR

Wetland Name	Latitude	Longitude	Cowardin Wetland Type	NWI Classification	ORAM Score	ORAM Category	Acreage within Survey Corridor
Wetland ESL-1	39.91099	-83.71894	PEM	None	17.5	Category 1	0.04
Wetland ESL-3	39.91120	-83.71817	PEM	None	13	Category 1	0.11
Total: 2	PEM: 2						0.15

Cowardin Wetland Type^a: PEM = palustrine emergent

The location and approximate extent of the wetlands identified within the survey corridor is shown on Figure 3B. Completed USACE wetland and upland delineation forms are provided in

Appendix A. Representative color photographs were taken of the delineated wetland during the field survey and are provided in Appendix D.

3.1.4 Delineated Wetlands ORAM V5.0 Results

Within the Project survey corridor, the two wetlands are a Category 1 wetland. Wetland ESL-1 had an ORAM score of 17.5 and Wetland ESL-3 had an ORAM score of 13. Completed ORAM forms are provided in Appendix B.

Category 1 Wetlands

The Category 1 wetlands delineated within the Project survey corridor both consist of a PEM wetland. Wetland ESL-1 had an ORAM score of 17.5 and Wetland ESL-3 had an ORAM score of 13. These wetlands exhibited very narrow upland buffers and intensive use of adjacent upland areas (commercial), exhibited limited plant community development with a sparse to moderate percentage of invasive species, and characteristically had habitat and hydrology in the early stages of recovering from previous manipulation due to commercial development or other disturbances.

Category 2 Wetlands

No Category 2 wetlands were identified during the field surveys within the Project survey corridor.

Category 3 Wetlands

No Category 3 wetlands were identified during the field surveys within the Project survey corridor.

3.2 STREAM CROSSINGS

AECOM identified one stream, totaling 224 linear feet, within the Project survey corridor, as listed in Table 3. The stream was identified as an intermittent stream. Based on the Stream Eligibility Web Map found on the Ohio EPA 401 website, Stream ESL-1 is located in a watershed potentially eligible for impacts permitted through Nationwide Permit 12. Under the nationwide permits for Ohio document that was reissued in March 2017, impacts to streams in possibly eligible watersheds will require a more detailed survey, which is outlined in the NWP document. No impacts to the stream are expected at this time.

AECOM has preliminarily determined that all assessed streams within the Project survey corridor appear to be jurisdictional (i.e., waters of the U.S.), as they all appear to be tributaries

that flow into or combine with other streams (waters of the U.S). The location of the stream identified within the survey corridor is shown on Figure 3C.

TABLE 3
DELINEATED STREAMS WITHIN THE EAST SPRINGFIELD-LONDON #2 138 KV TRANSMISSION LINE
EXTENSIONS TO NORTH TITUS SUBSTATION PROJECT SURVEY CORRIDOR

Report Name	Latitude	Longitude	Waterbody	Flow Regime	Form Used ^a	Score	Class or Narrative Description ^b	Bankfull Width (feet)	Maximum Pool Depth (inches)	OEPA 401 WQC Eligibility for Nationwide Permits	Linear Feet within Survey Corridor and Work Limits
Stream ESL-1	39.906319	-83.713746	Tributary to the North Fork Little Miami River	Intermittent	QHEI	45.5	FWW	3.5	6	Possibly Eligible	224
Total: 1											224

Form Used^a : QHEI = Qualitative Habitat Evaluation Index, HHEI = Headwater Habitat Evaluation Index, NA = Not Assessed (default to the State of Ohio's assessment)

Class or Narrative Description^b : FWW = Fair Warmwater

3.2.1 Qualitative Habitat Evaluation Index

One intermittent stream totaling 224 linear feet was assessed using the QHEI methodology within the Project survey corridor. The completed QHEI form for this stream is provided in Appendix C. Representative color photographs were taken of the stream during the field survey and are provided in Appendix D.

Fair Warmwater Stream – Stream ESL-1, totaling 224 linear feet, was designated as a fair Warmwater stream with a score of 45.5. Stream ESL-1 was identified as an intermittent stream. The substrates generally consisted of gravel and sand, with lesser amounts of cobble and silt. The stream generally showed evidence of no to little bank erosion, low channel sinuosity, fair to good channel development, and no in-stream cover. The maximum pool depth was six inches, and bank full width was 3.5 feet on average.

3.2.2 Primary Headwater Habitat Evaluation Index

There were no streams within the Project survey corridor assessed using the HHEI methodology.

3.3 PONDS

One pond, totaling approximately 0.10 acre, was identified within the Project survey corridor. This pond appears to be man-made for stormwater retention. The location of the pond is shown on Figure 3C. A representative color photograph taken of the pond during the field survey is provided in Appendix D.

4.0 SUMMARY

The ecological survey of the Project 200-foot wide survey corridor identified a total of two wetlands, one stream, and one pond. AECOM identified two emergent wetlands within the Project survey corridor. Both wetlands were a Category 1 wetland with a score of 17.5 (Wetland ESL-1) and 13 (Wetland ESL-3). No Category 2 or Category 3 wetlands were identified within the Project survey corridor.

AECOM identified one intermittent stream within the Project survey corridor. The stream was assessed using the QHEI methodology (drainage area greater than 1 mi²). This stream was identified as a fair warmwater stream with a score of 45.5.

One pond, totaling approximately 0.10 acre, was identified within the Project survey corridor. The pond appears to be man-made for stormwater retention purposes.

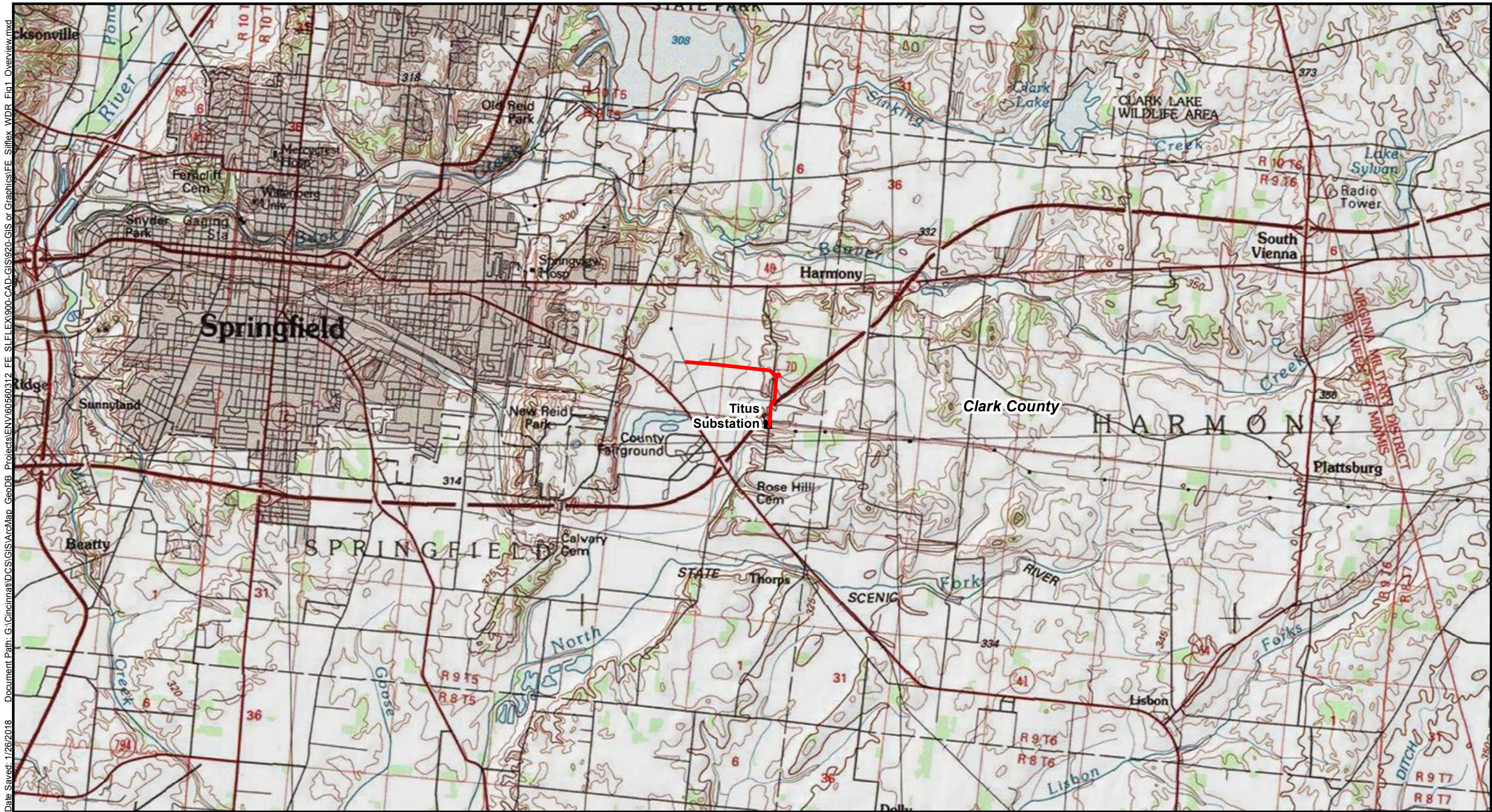
The information contained in this wetland delineation report is for a study area that may be much larger than the actual Project limits-of-disturbance; therefore, lengths and acreages listed in this report may not constitute the actual impacts of the Project defined in subsequent permit applications. If necessary, a separate report that identifies the actual Project impacts will be provided with agency submittals.

The field survey results presented herein apply to the existing and reasonably foreseeable site conditions at the time of our assessment. They cannot apply to site changes of which AECOM is unaware and has not had the opportunity to review. Changes in the condition of a property may occur with time due to natural processes or human impacts at the project site or on adjacent properties. Changes in applicable standards may also occur as a result of legislation or the expansion of knowledge over time. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond the control of AECOM.

5.0 REFERENCES

- Cowardin, L.M., V. Carter, F.C. Golet and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. Office of Biological Services, U.S. Fish and Wildlife Service, Washington, D.C.
- Ohio EPA, 2012. *Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams*. Version 3.0. Ohio EPA Division of Surface Water, Columbus, Ohio.
- Environmental Laboratory. 1987. *U.S. Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station: Vicksburg, Mississippi.
- Fritz, K.M., B.R. Johnson, and D.M. Walters. 2006. *Field Operations Manual for Assessing the Hydrologic Permanence and Ecological Condition of Headwater Streams*. EPA/600/R-06/126. U.S. Environmental Protection Agency, Office of Research and Development, Washington DC.
- Kollmorgen Corporation. 2010. Munsell Soil Color Charts. Baltimore, Maryland.
- Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. *Phytoneuron* 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X
- Mack, John J. 2001. *Ohio Rapid Assessment Method for Wetlands v. 5.0, User's Manual and Scoring Forms*. Ohio EPA Technical Report WET/2001-1. Ohio Environmental Protection Agency, Division of Surface Water, 401/Wetland Ecology Unit, Columbus, Ohio.
- Rankin, Edward T. 2006. *Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (QHEI)*. Ohio EPA Ecological Assessment Section, Division of Surface Water, Columbus, Ohio.
- U.S. Army Corps of Engineers. 2005. Regulatory Guidance Letter No. 05-05: Guidance on Ordinary High Water Mark Identification.
- U.S. Army Corps of Engineers. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)*, ed. J. S. Wakeley, R. W. Lichvar, C. V. Noble, and J.R. Berkowitz. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- U.S. Department of Agriculture, Soil Conservation Service. 1999. Soil Survey of Clark County, Ohio.
- U.S. Department of Agriculture, Natural Resources Conservation Service. 2018. National Hydric Soils List. <http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/>. Accessed 1/5/2018.

- U.S. Department of Agriculture, Natural Resources Conservation Service. 2017. National Weather Service- Wetland Climate Evaluation Database (WETS Table). <http://www.wcc.nrcs.usda.gov/climate/wetlands.html>. Accessed 1/5/18.
- U.S. Department of Agriculture, Natural Resources Conservation Service. 2017. Web Soil Survey (GIS Shapefile). <http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>. Accessed 1/5/18.
- U.S. Fish and Wildlife Service. 2017. National Wetlands Inventory Classification De-coder. Available online at <http://137.227.242.85/Data/interpreters/wetlands.aspx>. Accessed 1/5/18.



LEGEND

- Proposed East Springfield-London #2 Transmission Line Extensions
- Existing Substation

0 1 2
Miles

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps

Clark County, OH

MI IN PA KY WV

Chicago, Cleveland, Cincinnati, Columbus, Louisville, Charleston, Pittsburgh

ATSI

East Springfield-London #2 138 kV
Transmission Line Extensions to
North Titus Substation Project

**FIGURE 1
OVERVIEW MAP**

AECOM

JOB NO. 60560312

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Soil Unit	Soil Unit Description	Hydric Soil	Drainage Class	Acreage within Survey Corridor
WrA	Waynetown silt loam, 0 to 2 percent slopes	No	Somewhat poorly drained	3.55
MmD3	Miamian clay loam, shallow to dense till substratum, 12 to 18 percent slopes, severely eroded	No	Well drained	1.52
MmC3	Miamian clay loam, shallow to dense till substratum, 6 to 12 percent slopes, severely eroded	No	Well drained	4.51
ThA	Thackery silt loam, 0 to 2 percent slopes	No	Moderately well drained	4.65
EmA	Eldean silt loam, 0 to 2 percent slopes	No	Well drained	1.36
Ko	Kokomo silty clay loam, 0 to 2 percent slopes	Yes	Very poorly drained	16.69
MhB	Miamian silt loam, 2 to 6 percent slopes	Yes	Well drained	4.57
MhB2	Miamian silt loam, 2 to 6 percent slopes, eroded	No	Well drained	5.29
MkD2	Miamian silty clay loam, 12 to 18 percent slopes, eroded	No	Well drained	1.11
OcA	Ockley silt loam, Southern Ohio Till Plain, 0 to 2 percent slopes	No	Well drained	2.11



LEGEND

Proposed East Springfield-London #2 Transmission Line Extensions

Existing Substation

Project Survey Boundary

National Wetland Inventory (NWI)

Soil Unit

EmA

Ko

MhB

MhB2

MkD2

MmC3

MmD3

OcA

ThA

WrA

0 200 400 Feet

BASE MAP SOURCE:
ArcGIS Online, USA Topo Maps

ATSI

East Springfield-London #2 138 kV Transmission Line Extensions to North Titus Substation Project

FIGURE 2A

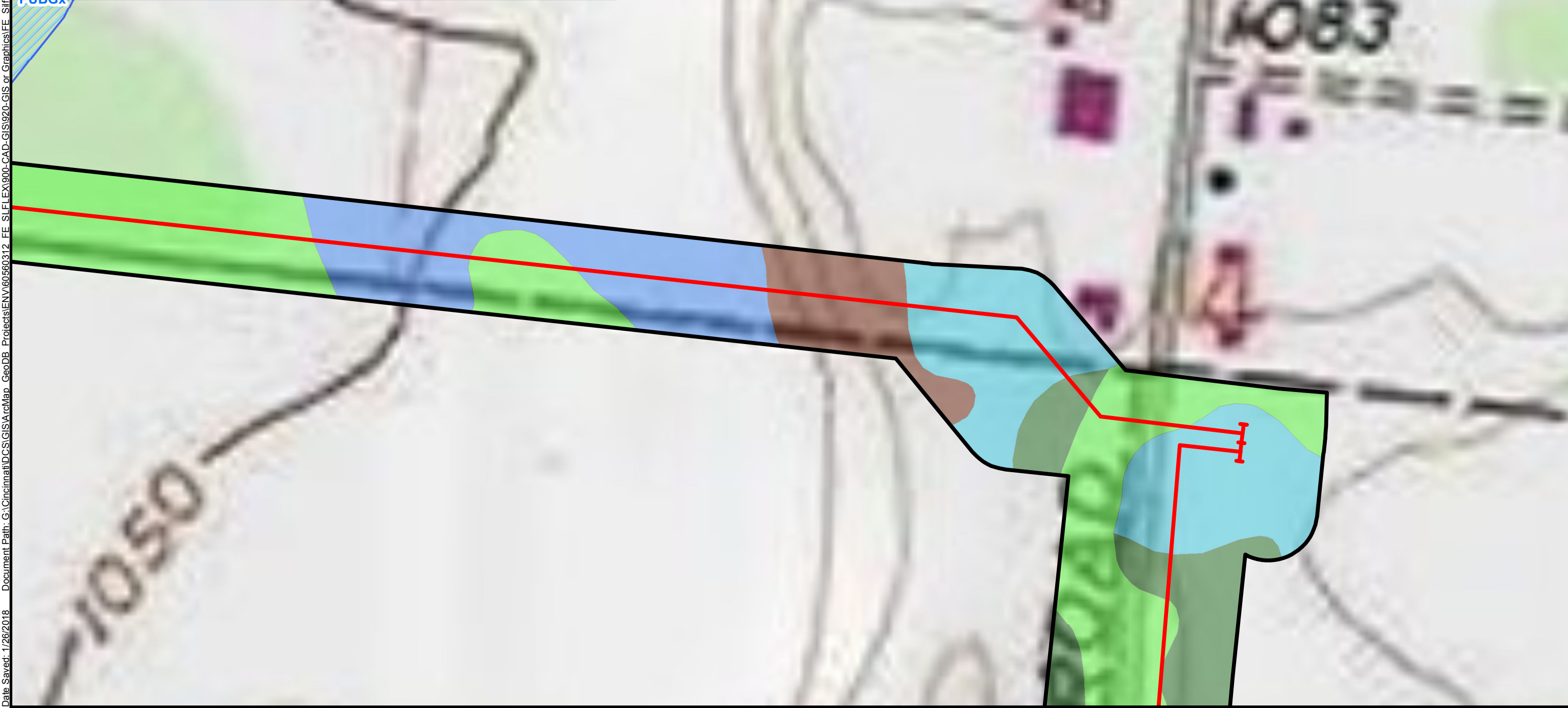
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

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Soil Unit	Soil Unit Description	Hydric Soil	Drainage Class	Acreage within Survey Corridor
WrA	Waynetown silt loam, 0 to 2 percent slopes	No	Somewhat poorly drained	3.55
MmD3	Miamian clay loam, shallow to dense till substratum, 12 to 18 percent slopes, severely eroded	No	Well drained	1.52
MmC3	Miamian clay loam, shallow to dense till substratum, 6 to 12 percent slopes, severely eroded	No	Well drained	4.51
ThA	Thackery silt loam, 0 to 2 percent slopes	No	Moderately well drained	4.65
EmA	Eldean silt loam, 0 to 2 percent slopes	No	Well drained	1.36
Ko	Kokomo silty clay loam, 0 to 2 percent slopes	Yes	Very poorly drained	16.69
MhB	Miamian silt loam, 2 to 6 percent slopes	Yes	Well drained	4.57
MhB2	Miamian silt loam, 2 to 6 percent slopes, eroded	No	Well drained	5.29
MkD2	Miamian silty clay loam, 12 to 18 percent slopes, eroded	No	Well drained	1.11
OcA	Ockley silt loam, Southern Ohio Till Plain, 0 to 2 percent slopes	No	Well drained	2.11



LEGEND

Proposed East Springfield-London #2 Transmission Line Extensions

Existing Substation

Project Survey Boundary

National Wetland Inventory (NWI)

Soil Unit

EmA

Ko

MhB

MhB2

MkD2

MmC3

MmD3

OcA

ThA

WrA

0200400

Feet

BASE MAP SOURCE:

ArcGIS Online, USA Topo Maps

Springfield

1900's

National Golf Links

Miami River

ATSI

East Springfield-London #2 138 kV Transmission Line Extensions to North Titus Substation Project

FIGURE 2B

SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60560312

AECOM

Soil Unit, Soil Unit Description, Hydric Soil, Drainage Class, Acreage within Survey Corridor

WrA	Waynetown silt loam, 0 to 2 percent slopes	No	Somewhat poorly drained	3.55
MmD3	Miamian clay loam, shallow to dense till substratum, 12 to 18 percent slopes, severely eroded	No	Well drained	1.52
MmC3	Miamian clay loam, shallow to dense till substratum, 6 to 12 percent slopes, severely eroded	No	Well drained	4.51
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EmA	Eldean silt loam, 0 to 2 percent slopes	No	Well drained	1.36
Ko	Kokomo silty clay loam, 0 to 2 percent slopes	Yes	Very poorly drained	16.69
MhB	Miamian silt loam, 2 to 6 percent slopes	Yes	Well drained	4.57
MhB2	Miamian silt loam, 2 to 6 percent slopes, eroded	No	Well drained	5.29
MkD2	Miamian silty clay loam, 12 to 18 percent slopes, eroded	No	Well drained	1.11
OcA	Ockley silt loam, Southern Ohio Till Plain, 0 to 2 percent slopes	No	Well drained	2.11



LEGEND

Proposed East Springfield-London #2 Transmission Line Extensions

Existing Substation

Project Survey Boundary

National Wetland Inventory (NWI)

Soil Unit

EmA

Ko

MhB

MhB2

MkD2

MmC3

MmD3

OcA

ThA

WrA

0 200 400 Feet

BASE MAP SOURCE: ArcGIS Online, USA Topo Maps

ATSI East Springfield-London #2 138 kV Transmission Line Extensions to North Titus Substation Project

FIGURE 2C
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

JOB NO. 60560312

AECOM

Soil Unit, Soil Unit Description, Hydric Soil, Drainage Class, Acreage within Survey Corridor

WrA	Waynetown silt loam, 0 to 2 percent slopes	No	Somewhat poorly drained	3.55
MmD3	Miamian clay loam, shallow to dense till substratum, 12 to 18 percent slopes, severely eroded	No	Well drained	1.52
MmC3	Miamian clay loam, shallow to dense till substratum, 6 to 12 percent slopes, severely eroded	No	Well drained	4.51
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EmA	Eldean silt loam, 0 to 2 percent slopes	No	Well drained	1.36
Ko	Kokomo silty clay loam, 0 to 2 percent slopes	Yes	Very poorly drained	16.69
MhB	Miamian silt loam, 2 to 6 percent slopes	Yes	Well drained	4.57
MhB2	Miamian silt loam, 2 to 6 percent slopes, eroded	No	Well drained	5.29
MkD2	Miamian silty clay loam, 12 to 18 percent slopes, eroded	No	Well drained	1.11
OcA	Ockley silt loam, Southern Ohio Till Plain, 0 to 2 percent slopes	No	Well drained	2.11



LEGEND

- Proposed East Springfield-London #2 Transmission Line Extensions
- Existing Substation
- Project Survey Boundary
- National Wetland Inventory (NWI)

Soil Unit

EmA	MkD2	WrA
Ko	MmC3	
MhB	MmD3	
MhB2	OcA	ThA

0 200 400 Feet

BASE MAP SOURCE: ArcGIS Online, USA Topo Maps

ATSI

East Springfield-London #2 138 kV Transmission Line Extensions to North Titus Substation Project

FIGURE 2D
SOIL MAP UNIT AND NATIONAL WETLAND INVENTORY MAP

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in

Case No(s). 18-0086-EL-BLN

Summary: Letter of Notification for the East Springfield-London #2 Extension to North Titus Substation Project (Part 3 of 4) electronically filed by Mr. Robert J Schmidt on behalf of American Transmission Systems Inc.