October 24, 2016

Mr. Dan Everson, Field Office Supervisor
U.S. Fish & Wildlife Service
Ohio Ecological Services Field Office
4625 Morse Road, Suite 104
Columbus, Ohio 43230

Dear Mr. Everson:

Subject: Agency Coordination Letter and
Threatened and Endangered Species Habitat Assessment
Line D000B Pipeline Replacement Project
Cincinnati, Hamilton County, Ohio
CEC Project 153-230

On behalf of Duke Energy Corporation (Duke Energy), Civil & Environmental Consultants, Inc. (CEC) has prepared the following letter report documenting the results of our federally-listed threatened and endangered species habitat assessment within the Line D000B Pipeline Replacement Project study corridor (the Project area) located in Cincinnati's East End, Hamilton County, Ohio. The variable Project study corridor width, averaging 200-foot wide, is approximately 3.45 miles in length and totals approximately 84.2 acres. In an effort to allow maximum project flexibility with respect to avoiding environmental constraints, the Project area extends beyond the proposed pipeline easement and associated workspace by design.

1.0 PROJECT DESCRIPTION

Duke Energy proposes to replace approximately 18,200 feet (3.45 miles) of existing single 20- and 24-inch spiral welded, coated steel, natural gas pipeline originally installed in 1948 with new 20- and 24-inch diameter, corrosion protected steel pipe. The pipeline easement is at maximum 50 feet in width, with up to another 20 to 50 feet of additional temporary workspace where required and available. Approximately 2.47 miles or 13,303 feet of the replacement pipeline is proposed to be collocated within the existing pipeline right-of-way (ROW), while the remaining 0.73 mile (3,857 feet) of replacement pipeline will be located within existing roadway

easement or new pipeline ROW. The north-western terminus of the Project begins southeast of Duke Energy Ohio's natural gas distribution center on the Cincinnati's East End Facility property. The pipeline will run in a south-southeast direction and will be bound by U.S. 52 to the east and the Ohio River to the southwest. The replacement pipeline will terminate near the confluences of the Little Miami and Ohio Rivers (Figure 1). Duke Energy is in the process of acquiring authorization from the Ohio Power Siting Board (OPSB). The project is authorized by the U.S. Army Corps of Engineers (USACE), pursuant to Nationwide Permit (NWP) 12 (Utility Line Activities). A Pre-Construction Notification to the USACE is not required for the Project as temporary impacts to waters of the U.S. are less than 0.1 acre and the project meets the NWP 12 specific regional conditions and Ohio State Certification Special Limitations and Conditions. The professional opinions expressed in this letter report were developed based upon observations made within the Project area on May 16, 18, and 19, 2016, and available information.

2.0 BACKGROUND

CEC was retained by Duke Energy to review available information and conduct an endangered and threatened species habitat assessment within the Project area. Prior to conducting the site visits, CEC reviewed the County Distribution List of Federally-Listed Threatened, Endangered, Proposed, and Candidate Species (USFWS 2016) on the U.S. Fish & Wildlife Service (USFWS) Midwest Ecological Services Regional Field Office website to determine which federally-listed endangered, federally-listed threatened, proposed endangered, proposed threatened, and candidate species are known to occur, or potentially occur, in Hamilton County (Attachment B).

In addition to reviewing the USFWS's Species Distribution List for Hamilton County, the Ohio Department of Natural Resources (ODNR) Division of Wildlife's County Distribution List of State Listed Wildlife Species was consulted for Federally-listed endangered or threatened species as occurring, or potentially occurring, in Hamilton County (Attachment C). This review also included an identification of state-listed plants that are also on the federal list of endangered and threatened species (Attachment D).

3.0 SITE OBSERVATIONS AND RESULTS OF DOCUMENT REVIEW

According to the USFWS's County Distribution List of Federally-Listed Threatened, Endangered, Proposed, and Candidate Species for Hamilton County, Ohio, the following species were identified as occurring, or potentially occurring in the Project area: the Indiana bat (*Myotis sodalis*, endangered), northern long-eared bat (*Myotis septentrionalis*, threatened), fanshell mussel (*Cyprogenia stegaria (=C. irrorata)*, endangered), pink mucket pearlymussel (*Lampsilis abrupta*, endangered), rayed bean mussel (*Villosa fabalis*, endangered), sheepnose mussel (*Plethobasus cyphyus*, endangered), snuffbox mussel (*Epioblasma triquetra*, endangered), and the running buffalo clover (*Trifolium stoloniferum*, endangered).

The ODNR (2016) lists the following federally-listed endangered or threatened species as occurring, or potentially occurring, in Hamilton County: the Indiana bat, northern long-eared bat, the running buffalo clover, as well as the five mussel species that were noted by the USFWS. The ODNR also identified purple cat's paw mussel (*Epioblasma obliquata*, endangered), northern riffleshell mussel (*Epioblasma torulosa rangiana*, endangered), clubshell mussel (*Pleurobema clava*, endangered), and the rabbitsfoot mussel (*Quadrula cylindrica*, threatened).

The Project area was evaluated by a team of two CEC biologists on May 16, 18, and 19, 2016, to document existing vegetation communities and hydrologic conditions. Each type of habitat present within the Project area was qualitatively evaluated for its potential to be suitable habitat for the Indiana bat, northern long-eared bat, running buffalo clover, and the aforementioned mussel species. Attachment A contains representative photographs of each habitat type found during the site visits and Figures 3 through 18 shows the approximate location of each photograph taken during the site visit.

The plant communities present within the Project area consists of manicured lawn habitat, mowed park habitat, existing ROW/early successional habitat, mixed early successional/second growth forest, mature floodplain forest, and wetland (Figures 3 through 18).

Mowed park habitat within the Project area is generally located between the northern terminus of the Project and Congress Avenue, and in the vicinity of Stites Road. This habitat type was observed at Schmidt Sports Complex, Turkey Ridge Recreational Area, along the Ohio River Trail, and at the Kellogg Avenue Park. Common plant species located within the mowed park

habitat includes oak trees (*Quercus* spp.), maple trees (*Acer* spp.), white clover (*Trifolium repens*), red clover (*Trifolium pratense*), common dandelion (*Taraxacum officinale*), bluegrass (*Poa* sp.), tall fescue (*Schedonorus arundinaceus*), and plantains (*Plantago* spp.). Representative photographs of this habitat type are included in Attachment A. The locations of the mowed park habitat present within the Project area and the location and direction where each photograph was taken are shown on Figures 3 through 18.

Existing ROW/early successional habitat within the Project area is generally located along the existing, bermed ROW near the southeastern extent of the Project. Common plant species located within this habitat type includes white clover, red clover, giant ironweed (*Vernonia gigantea*), stickywilly (*Galium aparine*), creeping jenny (*Lysimachia nummularia*), poison ivy (*Toxicodendren radicans*), hog peanut (*Amphicarpaea bracteata*), great ragweed (*Ambrosia trifida*), common ragweed (*Ambrosia artemisiifolia*), wingstem (*Verbesina alternifolia*), Canada goldenrod (*Solidago altissima*), eastern daisy fleabane (*Erigeron annus*), Indianhemp (*Apocynum cannabinum*), Japanese honeysuckle (*Lonicera japonica*), and Amur honeysuckle *(Lonicera maackii*), box elder (*Acer negundo*), and silver maple (*Acer saccharinum*). Representative photographs of this habitat type are included in Attachment A. The locations of the existing ROW/early successional habitat present within the Project area and the location and direction where each photograph was taken are shown on Figures 3 through 18.

Mixed early successional/second growth forest habitat within the Project area is generally located along the Ohio River Trail, Kellogg Avenue, and Anchorage Road. The overstory vegetation was dominated by box elder, black locust (*Robinia pseudoacacia*), red mulberry (*Morus rubra*), hackberry (*Celtis occidentalis*), and maple trees. Dominant shrubs and vines within this habitat type included grapevines (*Vitis* spp.), amur and Japanese honeysuckles, and poison ivy. Common herbaceous species included hog peanut, spotted ladysthumb (*Polygonum persicaria*), garlic mustard (*Allaria petiolata*), common ragweed, poison ivy, Virginia creeper (*Parthenocissus quinquefolia*), and creeping jenny (*Lysimachia nummularia*). Representative photographs of this habitat type are included in Attachment A. The locations of the mixed early successional/second growth forest habitat present within the Project area and the location and direction where each photograph was taken are shown on Figures 3 through 18.

Mature floodplain forest is generally limited to the expansive forested area at the southeast terminus of the Project near the confluence of the Little Miami and Ohio Rivers. This area is

heavily influenced by seasonal flooding. Forest canopy composition is largely silver maple (*Acer saccharinum*) and eastern cottonwood (*Populus deltoids*), with a subcanopy that includes box elder, American elm (*Ulmus Americana*), hackberry, green ash (*Fraxinus pennsylvanica*), and red maple (*Acer rubrum*). Common herbaceous species included hog peanut, great ragweed, poison ivy, creeping jenny, false nettle (*Boehmeria cylindrica*), stinging nettle (*Urtica dioica*), wingstem, and giant ironweed. Representative photographs of this habitat type are included in Attachment A. The locations of the mature floodplain forest habitat present within the Project area and the location and direction where each photograph was taken are shown on Figures 3 through 18.

Wetland habitat was identified at six locations within the Project area. The wetland habitat, totaling 3.27 acres, consisted of two different plant community types, an emergent community (0.26 acre) and a forested community (3.01 acres). The forested vegetation communities were generally dominated by silver maple, cottonwood, box elder, American sycamore (*Platanus occidentalis*), while the herbaceous plant communities were generally dominated by creeping jenny, false nettle, Gray's sedge (*Carex grayi*), poison ivy, common threesquare (*Schoenoplectus pungens*), curly dock (*Rumex crispus*), common blue violet (*Viola sororia*), and poison hemlock (*Conium maculatum*), reed canarygrass (*Phalaris arundinacea*), and whitegrass (*Leersia virginica*). Representative photographs of this habitat type are included in Attachment A. The locations of the wetland habitat present within the Project area and the location and direction where each photograph was taken are shown on Figures 3 through 18.

4.0 THREATENED AND ENDANGERED SPECIES DOCUMENT REVIEW AND HABITAT ASSESSMENT

4.1 Running Buffalo Clover

Running buffalo clover is a member of the Fabaceae (pea) family that produces erect flowering stems, 10 to 30 centimeters (cm) tall that send out long basal runners (stolons) (USFWS 2007a). The basal runners root at the nodes and produce leaves that have 1 to 2 cm long ovate-lanceolate stipules, whose tips gradually narrow to a distinctive point (USFWS 2007a). The plant produces 9 to 12 millimeters round white flowers from mid-April to June, with fruiting occurring from May to July. A single plant is defined as an individual rooted crown (USFWS 2007a). These

crowns may occur singly or be attached to other rooted crowns by stolons. Brooks (1983) provides a more comprehensive description of this species.

Historically, running buffalo clover was found from the central plains to the Appalachian Mountains. The species was once thought extinct until a single population was rediscovered in West Virginia in 1983 (Brooks 1983). Since then, populations have been discovered in Indiana, Kentucky, Missouri, and Ohio. Current populations are divided into three regions based on proximity to each other and overall habitat similarities. These regions are Appalachian (West Virginia and southeastern Ohio), Bluegrass (southwestern Ohio, central Kentucky, and Indiana), and Ozark (Missouri) (USFWS 2007a).

Habitat for running buffalo clover typically includes locations with partial or filtered sunlight and with moist, fertile soils that have been exposed to long-term moderate patterns of disturbance (CPC 2010; Natureserve 2015). It is thought that large herbivores like bison and cattle provided the necessary scarification of the soil for plants to germinate. Populations of this species are often found in the ecotone between forest and tallgrass prairie habitats (CPC 2010).

Additionally, others describe the habitat of this species as including mesophytic woodlands (Isely 1998), moist, well drained disturbed woods associated with streams (Gleason and Cronquist 1991), and open woods, borders, and forest clearings. It has been reported from a variety of habitats, including mesic woodlands, savannahs, floodplains, stream banks, sandbars (especially where old trails cross or parallel intermittent streams), grazed woodlots, infrequently mowed paths (e.g. in cemeteries, parks, and lawns), old logging roads, jeep trails, skidder trails, mowed wildlife openings within mature forest, and steep ravines (USFWS 2007a). No critical habitat has been designated for this species.

Running buffalo clover was listed by the USFWS as federally endangered on July 6, 1987 (50 FR 21478-21480) (USFWS 2007a). Specific threats identified by the Running Buffalo Clover Recovery Team in 1995 were: 1) any irreversible, catastrophic disturbance, such as road construction that completely destroys the habitat and/or kills all plants and seeds within the path of the disturbance; 2) the closing of forest canopies through succession to the point of severe shading, leading to reduced flower and fruit production; 3) the elimination of bison leading to reduced seed dispersal and release of competing vegetation; 4) low population size and associated fragility and susceptibility to catastrophe (including genetic diversity concerns);

5) excessive herbivory; 6) viral and fungal diseases; 7) reduction in pollinators; and 8) competition from non-native, invasive plant species (USFWS 2007a).

Running buffalo clover was rediscovered in Ohio in 1988 and is listed as endangered by the state of Ohio. According to the USFWS (2007), 18 extant populations and eight extirpated populations were known from Ohio, as of 2005. Populations have been primarily found in mesic forest and lawn habitats in Hamilton, Clermont, Brown, and Lawrence counties. Most of the known populations are reportedly located on county park lands and have been managed as to protect and encourage RBC. The first population on Federal land in Ohio was located in 2005 on Wayne National Forest (USFWS 2007).

CEC conducted a pedestrian survey of potentially suitable running buffalo clover habitats within the Project area, followed by a presence-absence survey on May 16, 18, and 19, 2016. Prior to conducting the RBC surveys, a pre-survey verification of a known RBC population was conducted at the Dinsmore Woods State Nature Preserve in Boone County, Kentucky. The purpose of this verification was to determine the precise flowering period and "phenophase" of the known population. This would allow the field survey to be conducted knowing the growth condition of the species to assist in better observation and species presence determinations. During the pre-survey site verification, photographs of the condition of the existing known population were made and the specific plant growth stage was noted. In addition, attention was directed toward observation of plant associations, soils, amount of vegetative shading, duration of disturbance, and amount of disturbance that were habitat characteristics of the known RBC population.

The RBC survey results for the Project study corridor and reference population location are presented below on Table 1.

TABLE 1
RUNNING BUFFALO CLOVER SURVEY RESULTS

Survey Date	Site Name	Latitude	Longitude	Site Location	Habitat Type	RBC Present/ Absent
May 5, 2016	Reference Population	39.000841	-84.814890	Dinsmore Woods State Nature Preserve Boone County, Kentucky	Walking trail leading to ridge top and adjacent cemetery. Site receives periodic disturbance and filtered sunlight.	Present
May 16 & 18, 2016	1	39.080896	-84.427648	Near Four Seasons Marina and the confluence of the Little Miami and Ohio Rivers	Bottomland hardwood forest bisected by a pipeline ROW/early successional habitat. Site receives periodic disturbance and filtered sunlight.	Absent
May 18, 2016	2	39.082402	-84.427663	Near Four Seasons Marina and the confluence of the Little Miami and Ohio Rivers	Trail or two track habitat that is located on an embankment that formerly functioned as a railroad corridor. Site receives periodic disturbance and filtered sunlight.	Absent
May 19, 2016	3A 3B 3C 3D	39.115040 39.115381 39.115666 39.115969	-84.443193 -84.443573 -84.443945 -84.444430	Adjacent to Turkey Ridge Park, the Ohio River Trail, and Humbert Avenue	Mowed park habitat with scattered overstory trees. Site receives periodic disturbance and filtered sunlight.	Absent
May 19, 2016	4	39.118429	-84.448547	Located at Schmidt Recreation Complex and adjacent to the Ohio River Trail	Mowed park habitat with scattered overstory trees. Site receives periodic disturbance and filtered sunlight.	Absent

The running buffalo clover habitat survey revealed approximately 5.06 acres or about 6 percent of the total Project area met the habitat considerations as potential RBC habitat (Figures 3 through 18). The potential RBC habitat that was identified included bottomland hardwood forest, trail or two track habitat, and mowed park habitat. The remaining areas within the Project study corridor do not provide suitable habitat conditions for the RBC based on one or more of the following habitat considerations: extent of disturbance, solar exposure, soil saturation, and/or a dense understory.

No running buffalo clover individuals or populations were identified during the subsequent presence-absence survey that was completed by CEC biologist\USFWS approved running buffalo clover surveyor Joey Van Skaik on May 16, 18, and 19, 2016. Background information, running buffalo clover natural history, survey methodology, and findings are presented in the standalone report entitled Running Buffalo Clover Survey Report (Attachment E). It is CEC's opinion that the project may affect, but is not likely to adversely affect the running buffalo clover.

4.2 Indiana Bat and Northern Long-Eared Bat

The federally endangered Indiana bat and federally threatened northern long-eared bat may potentially occur in Hamilton County. During winter, Indiana bats and northern long-eared bats hibernate in caves and abandoned mines. Summer habitat requirements for the species are not well defined but the following are considered important: (i) dead or live trees and snags with peeling or exfoliating bark, split tree trunk and/or branches, or cavities, which may be used as maternity roost areas; (ii) live trees (such as shag-bark hickory and oaks) which have exfoliating bark; (iii) stream corridors, riparian areas, and upland woodlots which provide forage sites.

CEC conducted a habitat assessment and pedestrian survey of potentially suitable Indiana and northern long-eared bat habitat within the Project area on May 16, 18, and 19, 2016. Small areas of trees are scattered through the Project area, with the primary forested area, consisting of approximately 150 acres of contiguous forested habitat, located at the southeastern terminus of the project near the confluence of the Little Miami and Ohio Rivers.

One hundred and seven (107) potential bat roost trees (PRTs) were identified during the pedestrian survey of the Project study corridor, as shown on Figures 3 through 18.

Approximately 73 percent (78) of the total PRTs were identified within the portion of the Project area located within primary forested area. The Project area within the primary forested area is heavily influenced by seasonal flooding. Forest canopy composition is largely silver maple (*Acer saccharinum*) and eastern cottonwood (*Populus deltoids*), with a subcanopy that includes box elder (*Acer negundo*), American elm (*Ulmus Americana*), hackberry (*Celtis occidentalis*), green ash (*Fraxinus pennsylvanica*), and red maple (*Acer rubrum*).

The canopy was fairly open with some opening above the ROW and in other inundated areas where trees had fell. Canopy trees averaged approximately 15-inch diameter at breast height (dbh) with larger trees scattered along the floodplain; primarily silver maple and eastern cottonwoods. Many of these trees had characteristics that made them suitable as bat roosts including sloughing bark, cracks and crevices, and hollowed boles and limbs.

The subcanopy was generally open with some areas of clutter as elevation increased out of the seasonal floodplain. Subcanopy trees averaged approximately 6 inches dbh and were more common when elevational changes increased. Overall, subcanopy was open with minimal clutter to prohibit flight underneath the canopy. The existing ROW and a separate ROW that bisected the project ROW near the eastern terminus provided optimal travel and foraging areas for Indiana bats and northern long-eared bats (if present).

Tree removal is planned to be kept to a minimum as approximately 72 percent of the replacement pipeline is proposed to be collocated within the existing pipeline ROW. The Project proposes to remove 10 PRTs. Nine (9) of the PRTs are located within the primary forested area, and one PRT is located along the Ohio River Trail, to the west of Setchell Street. The nine PRTs that are proposed to be removed in the primary forested area include three (3) declining silver maples, two (2) dead silver maples, and four (4) dead specimens where the species cannot be discerned. The PRT that is proposed to be removed along the Ohio River Trail is a dead black locust. A table summarizing characteristics of the potential habitat trees, including species, size, estimated percent canopy cover, condition, and interpreted quality, are presented below on Table 2. No human structures, including houses, barns, pavilions, sheds and cabins, will be impacted as part of the Project. Additionally, no winter hibernacula were identified within or near the Project area.

TABLE 2
POTENTIAL INDIANA BAT/NORTHERN LONG-EARED BAT HABITAT ROOST TREES PROPOSED TO BE REMOVED

Potential Roost Tree (PRT) Number	Species	Estimated % Canopy Cover	Condition	Diameter at Breast Height (inches)	Quality	Comment
8	*Acer saccharinum*	65%	Declining	10"	Low	Silver maple snag along edge of existing, maintained gas pipeline ROW.
9	*Acer saccharinum*	60%	Declining	20"	Low to Moderate	Mature silver maple along edge of existing, maintaining gas pipeline ROW with holes and dead branches.
10	*Acer saccharinum*	50%	Declining	12"	Low	Silver maple along edge of existing, maintained gas pipeline ROW with dead branches.
12	*Acer saccharinum*	60%	Dead	8"	Low	Dead silver maple along edge of existing, maintained gas pipeline ROW.
19	Not discernible	50%	Dead	10"	Low	Dead specimen along edge of existing, maintained gas pipeline ROW with holes and broken branches.
20	Not discernible	50%	Dead	8"	Low	Dead silver maple along edge of existing, maintained gas pipeline ROW.
47	Not discernible	55%	Dead	10"	Low	Dead snag along edge of existing, maintained gas pipeline ROW with holes.
50	Not discernible	55%	Dead	15"	Low to Moderate	Dead snag with split trunks near edge of existing, maintained gas pipeline ROW.
51	*Acer saccharinum*	55%	Dead	16"	Low to Moderate	Dead snag with holes and peeling bark near existing, maintained gas pipeline ROW.
96	*Robinia pseudoacacia*	60%	Dead	15"	Low	Dead specimen along the Ohio River Trail.

Note: Declining is when a tree exhibits noticeable deterioration such as trunk damage, bare branches, damaged roots, and/or loss of bark.

Tree-removal may remove potential roosting habitat for the Indiana bats and northern long-eared bats. This tree-removal will occur during the winter when the Indiana bat and northern long-eared bat are hibernating and not occupying roost trees. Therefore, project activities will not result in direct injury or mortality, only potential roosting habitat loss. It is CEC's opinion that the project may affect, but is not likely to adversely affect the Indiana bat and the northern long-eared bat.

4.3 Federally-Listed Endangered Mussel Species

As discussed in Section 2.0, several federally-listed endangered mussel species have been identified by the USFWS (Attachment B) and ODNR (Attachment C) as being known to occur, or having potential to occur, in Hamilton County. CEC conducted a pedestrian survey for potentially suitable federally-listed endangered mussel species habitats (perennial streams and rivers) within the Project area.

No perennial streams, rivers, or other potentially suitable habitat for freshwater mussel species was identified within the Project area. Based on the absence of freshwater mussels and suitable mussel habitat, it is CEC's opinion that the project will not effect to federally-listed mussel species.

5.0 CONCLUSIONS

No occurrences of federally-listed threatened, endangered, or proposed endangered species are known from the Project area.

No running buffalo clover individuals or populations were identified during habitat assessment and presence-absence survey completed by CEC on May 16, 18, and 19, 2016.

One hundred and seven (107) potential bat roost trees (PRTs) were identified during the pedestrian survey of the Project study corridor, as shown on Figures 3 through 18. Only ten (10) of the 107 PRTs are located within the proposed project limit-of-disturbance (LOD). The Project proposes to remove these 10 PRTs. Tree removal may remove potential roosting habitat for the Indiana bats and northern long-eared bats. This tree removal will occur during the winter when the Indiana bat and northern long-eared bat are hibernating and not occupying roost

trees. Therefore, project activities will not result in direct injury or mortality, only potential roosting habitat loss. It is our opinion that the project may affect, but is not likely to adversely affect the Indiana bat and the northern long-eared bat.

No perennial streams, rivers, or other potentially suitable habitat for freshwater mussel species was identified within the Project area.

6.0 CLOSING

On behalf of Duke Energy, CEC respectfully requests your concurrence with the above effect determinations for federally-listed endangered and proposed endangered species. If you have any questions or require additional information, please contact the undersigned at 513-985-0226.

Very truly yours,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

Dustin M. Giesler
Staff Scientist

Joseph A. Van Skaik
Project Manager

Attachments: Figure 1 – Project Location Map
Figure 2 – Habitat Assessment Index Map
Figures 3 through 18 – Habitat Assessment Map
Attachment A – Site Photographs
Attachment B – USFWS Ohio County Distribution of Federally-Listed, Threatened, Endangered, Proposed, and Candidate Species, Revised September 2016
Attachment C – ODNR State Listed Wildlife Species for Hamilton County
Attachment D – ODNR Rare Native Ohio Plants Status List
Attachment E – Running Buffalo Clover Survey Report

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7.0 REFERENCES

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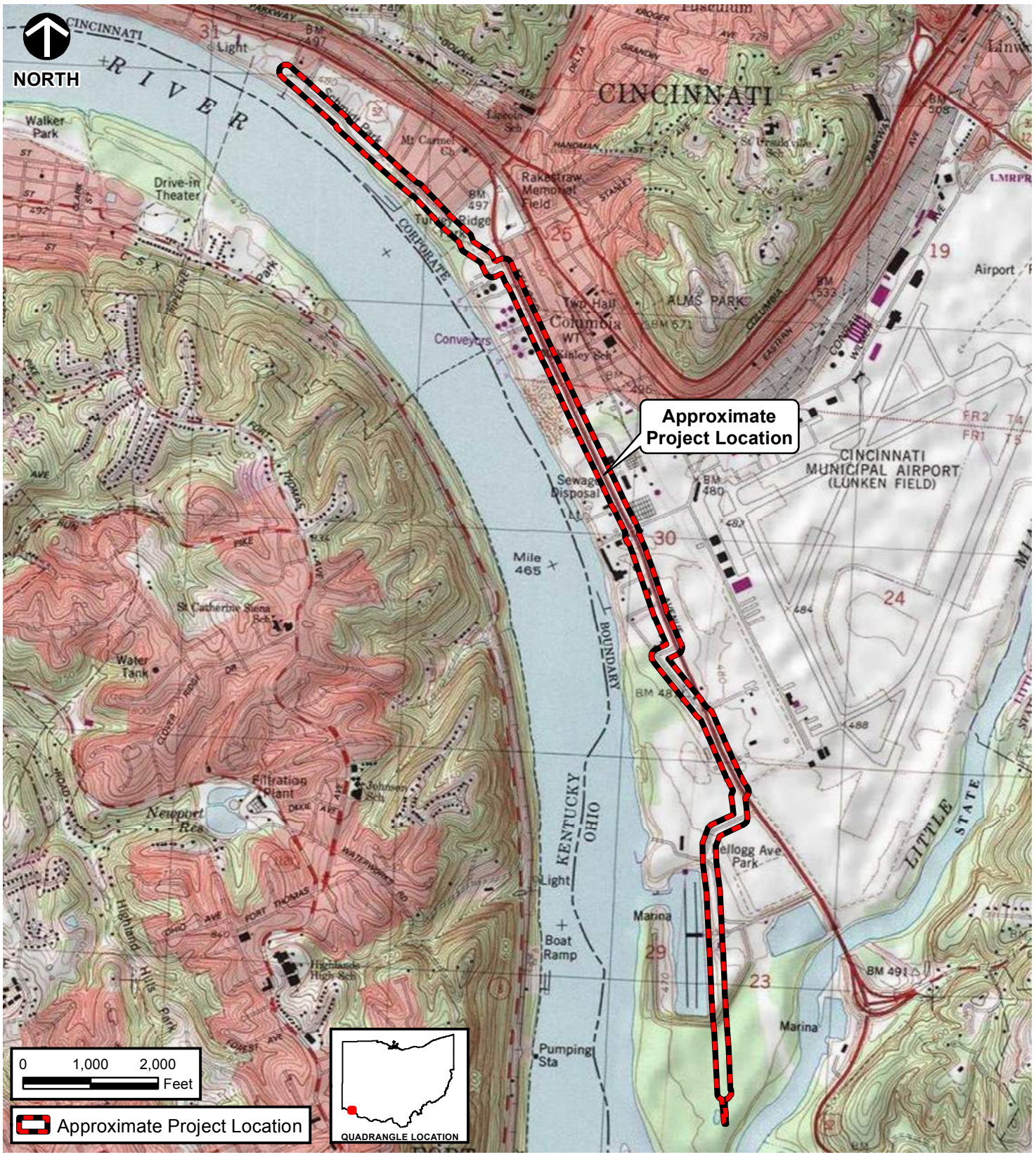
FIGURES



SOURCE: PORTION OF THE USGS 7.5-MINUTE SERIES TOPOGRAPHIC QUADRANGLE MAP OF NEWPORT, KENTUCKY-OHIO - 1984.

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DUKE ENERGY
LINE D000B PIPELINE REPLACEMENT PROJECT
CINCINNATI, HAMILTON COUNTY, OHIO

PROJECT LOCATION MAP

DRAWN BY:	DMG	CHECKED BY:	JAV	APPROVED BY:	JAV*	FIGURE NO:	1
DATE:	OCTOBER 24, 2016	DWG SCALE:	1 " = 2,000 '	PROJECT NO:	153-230		

Signature on File *

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SOURCE: USDA FSA NATIONAL AGRICULTURAL IMAGERY PROGRAM (NAIP) HAMILTON COUNTY MOSAIC. IMAGE DATE: 2015.

Variable Width Study Corridor

600 0 600 1,200
Feet

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DUKE ENERGY
LINE D000B PIPELINE REPLACEMENT PROJECT
CINCINNATI, HAMILTON COUNTY, OHIO

THREATENED AND ENDANGERED SPECIES
HABITAT ASSESSMENT INDEX MAP

DRAWN BY:	DMG	CHECKED BY:	JAV	APPROVED BY:	JAV*	FIGURE NO:
DATE:	OCTOBER 24, 2016	DWG SCALE:	1 " = 1,200 '	PROJECT NO:	153-230	2

Signature on File *

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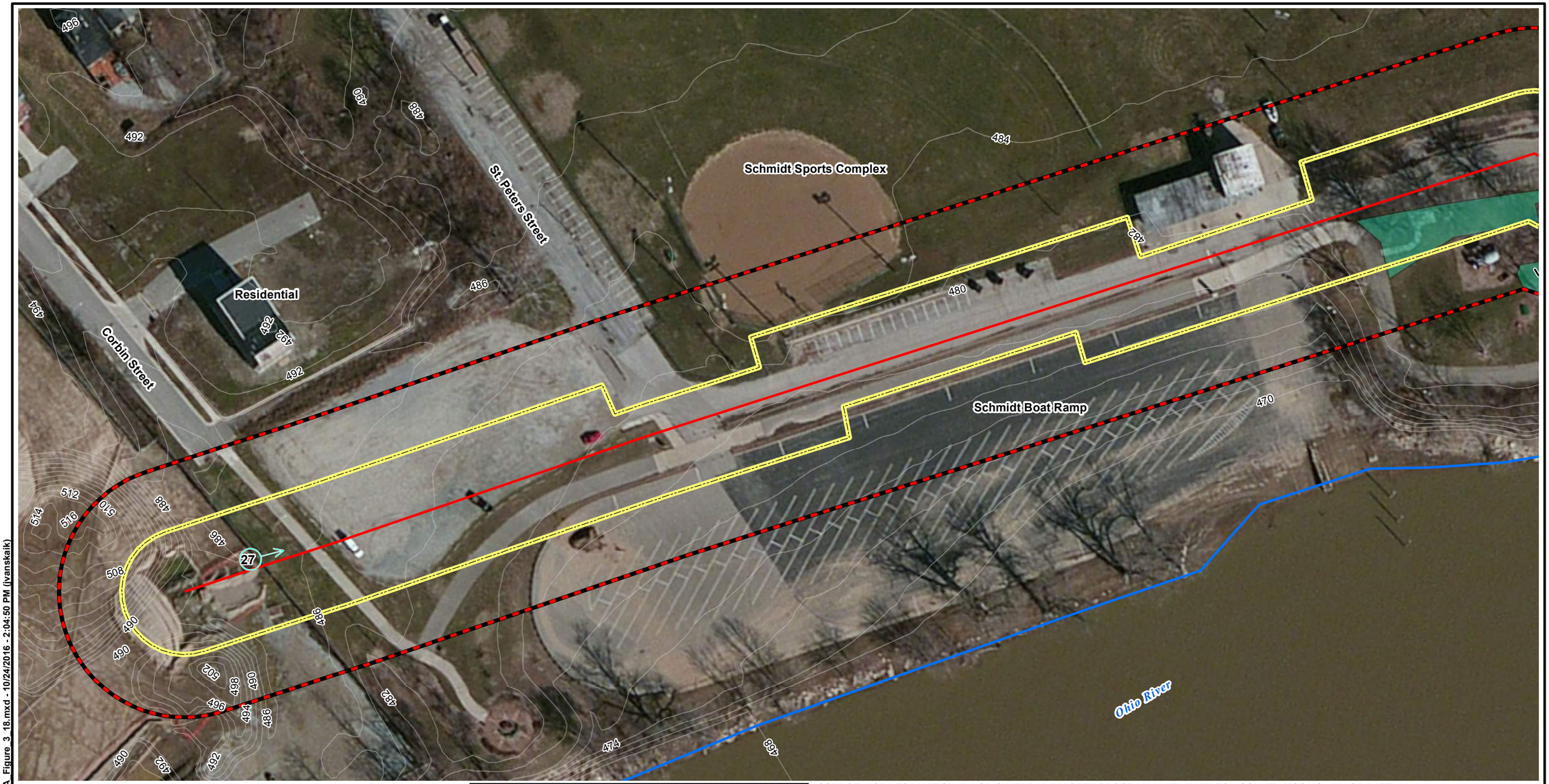
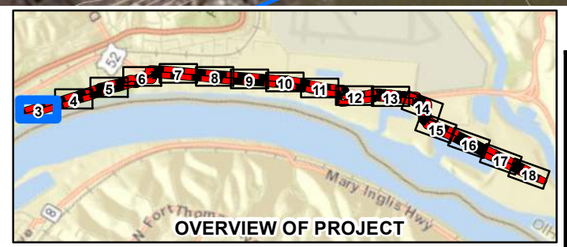


Proposed Replacement Pipeline
Variable Width Study Corridor
Proposed Limit-of-Disturbance

Delineated Wetland

Palustrine Emergent (PEM)
Palustrine Forested (PFO)
Potential Indiana Bat\ Northern Long-Eared Bat Roost Tree
Potential Running Buffalo Clover Habitat
Ohio River or Backwater Area
Existing Culvert
2-Foot Contour Interval
Photograph Location and Direction

NORTH



NOTES: FULL EXTENT OF STUDY CORRIDOR IS WITHIN 100-YEAR FLOODPLAIN.
NO STREAMS OR WATERBODIES WERE IDENTIFIED WITHIN THE STUDY CORRIDOR.

0 75 150 Feet

SOURCE: USDA FSA NATIONAL AGRICULTURAL IMAGERY PROGRAM (NAIP) HAMILTON COUNTY MOSAIC. IMAGE DATE: 2015.
SOURCE: CAGIS 2-FOOT INTERVAL ELEVATION CONTOURS.

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CINCINNATI, HAMILTON COUNTY, OHIO

THREATENED AND ENDANGERED SPECIES HABITAT ASSESSMENT MAP

DRAWN BY:	DMG	CHECKED BY:	JAV	APPROVED BY:	JAV*	FIGURE NO:
DATE:	OCTOBER 24, 2016	DWG SCALE:	1 " = 75 '	PROJECT NO:	153-230	3

Signature on File *

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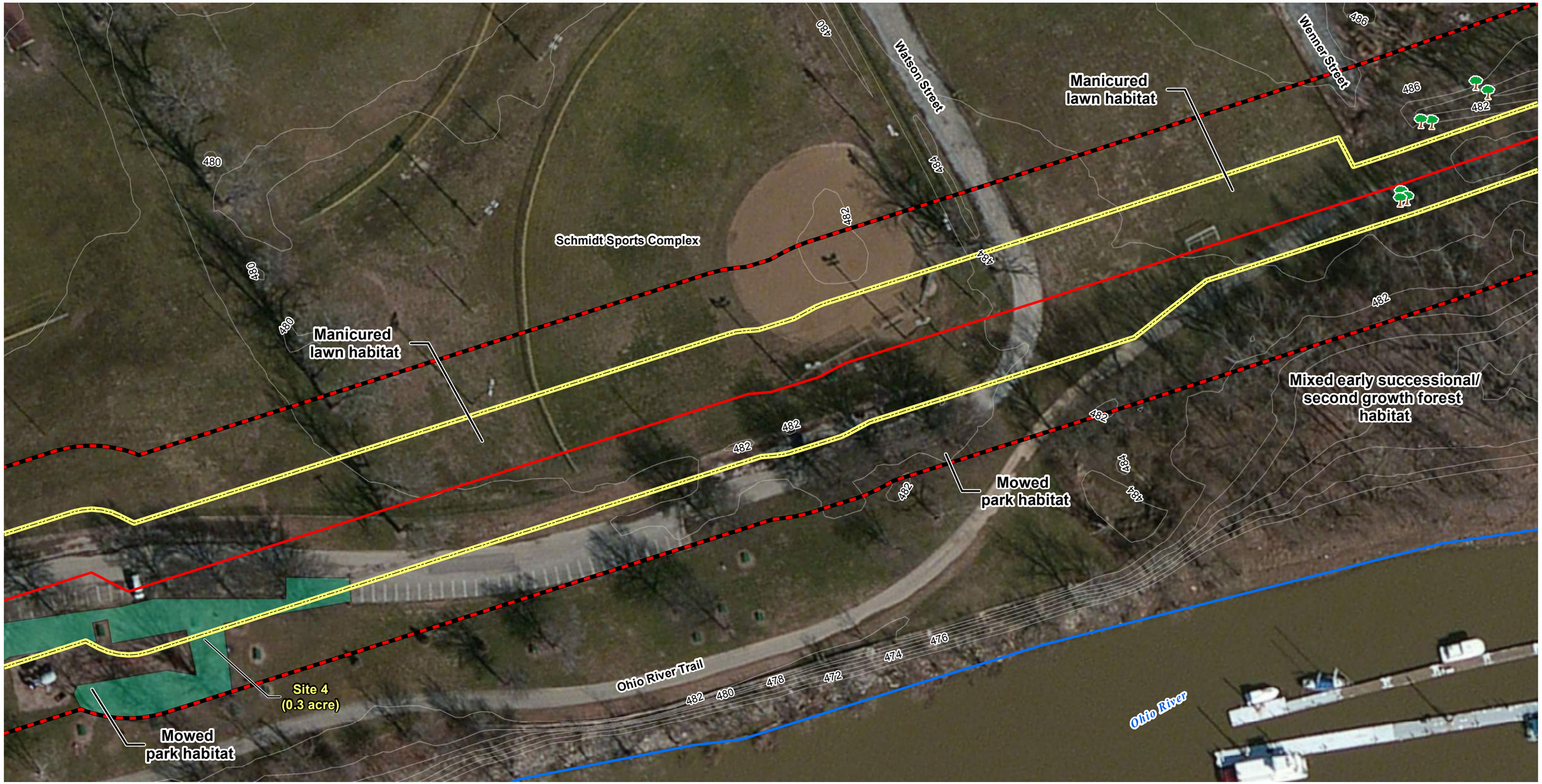
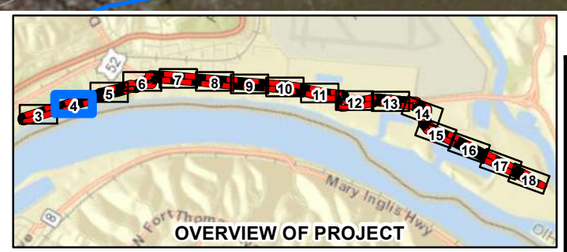


- Proposed Replacement Pipeline
- Variable Width Study Corridor
- Proposed Limit-of-Disturbance

Delineated Wetland

- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Potential Indiana Bat\ Northern Long-Eared Bat Roost Tree
- Potential Running Buffalo Clover Habitat
- Ohio River or Backwater Area
- Existing Culvert
- 2-Foot Contour Interval
- Photograph Location and Direction

NORTH



NOTES: FULL EXTENT OF STUDY CORRIDOR IS WITHIN 100-YEAR FLOODPLAIN.
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0 75 150 Feet

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THREATENED AND ENDANGERED SPECIES HABITAT ASSESSMENT MAP

DRAWN BY:	DMG	CHECKED BY:	JAV	APPROVED BY:	JAV*	FIGURE NO:
DATE:	OCTOBER 24, 2016	DWG SCALE:	1 " = 75 '	PROJECT NO:	153-230	4

Signature on File *

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Mowed park habitat
Site 3A (0.2 acre)
Mowed park habitat
Site 3B (0.2 acre)
Mowed park habitat
Site 3C (0.21 acre)
Mowed park habitat
Site 3D (0.29 acre)
PRT-96 (To be Removed)
Residential
Residential
Setchell Street
Strader Avenue
Worth Street
Delta Avenue
Humbert Avenue
Manicured lawn habitat
Turkey Ridge Park
Ohio River Trail
Ohio River Launch Club
26
484
482
480
486
488
478
476
474
472
470

Proposed Replacement Pipeline
Variable Width Study Corridor
Proposed Limit-of-Disturbance
Delineated Wetland
Palustrine Emergent (PEM)
Palustrine Forested (PFO)
Potential Indiana Bat\ Northern Long-Eared Bat Roost Tree
Potential Running Buffalo Clover Habitat
Ohio River or Backwater Area
Existing Culvert
2-Foot Contour Interval
Photograph Location and Direction

NORTH

OVERVIEW OF PROJECT

NOTES: FULL EXTENT OF STUDY CORRIDOR IS WITHIN 100-YEAR FLOODPLAIN.
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0 75 150 Feet

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CINCINNATI, HAMILTON COUNTY, OHIO

THREATENED AND ENDANGERED SPECIES HABITAT ASSESSMENT MAP

DRAWN BY:	DMG	CHECKED BY:	JAV	APPROVED BY:	JAV*	FIGURE NO:
DATE:	OCTOBER 24, 2016	DWG SCALE:	1 " = 75 '	PROJECT NO:	153-230	5

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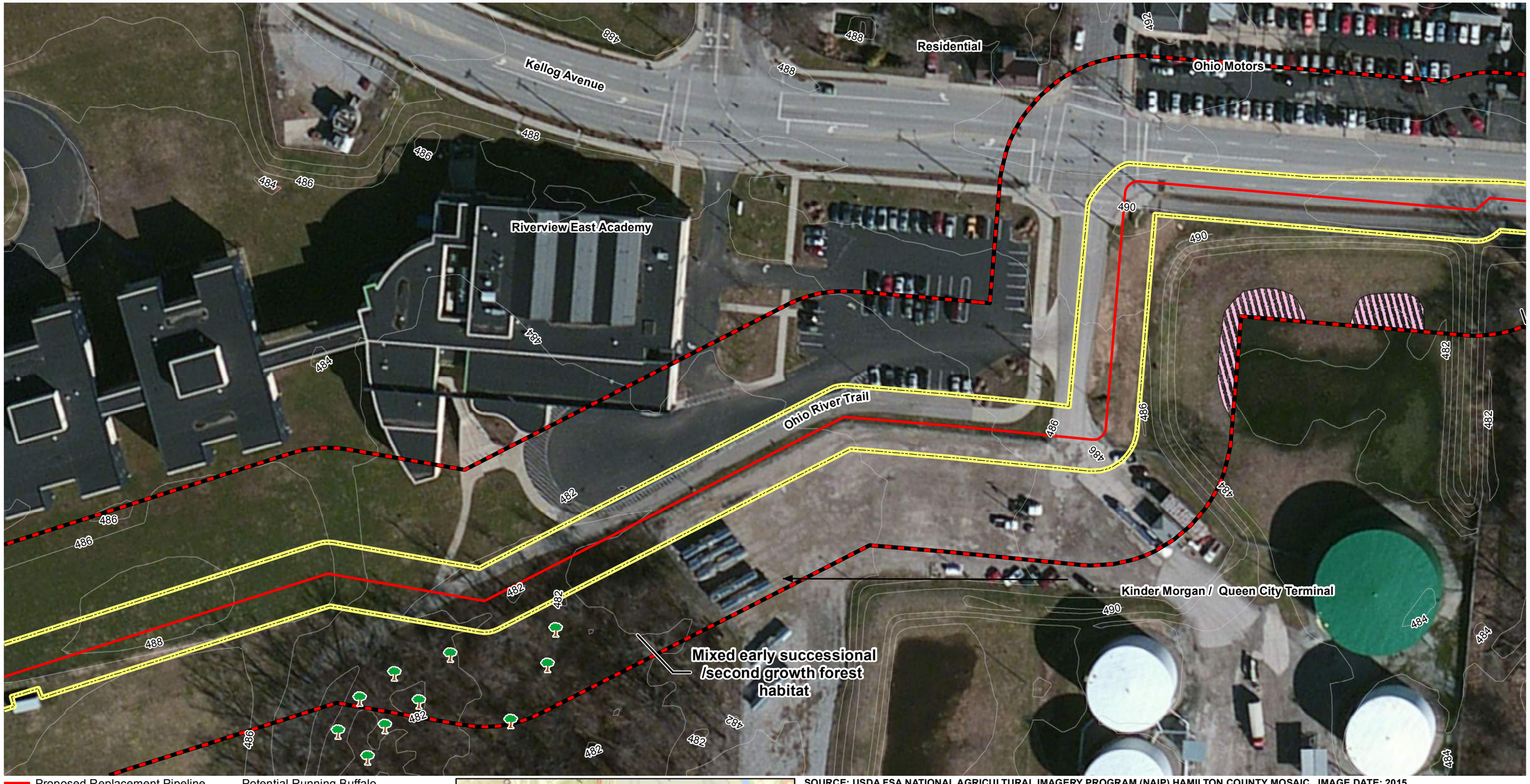

- Proposed Replacement Pipeline
- Variable Width Study Corridor
- Proposed Limit-of-Disturbance

Delineated Wetland

- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Potential Indiana Bat\ Northern Long-Eared Bat Roost Tree
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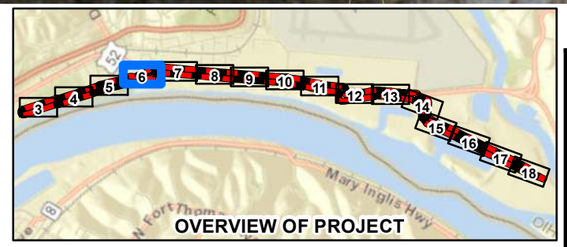
- Ohio River or Backwater Area
- Existing Culvert
- 2-Foot Contour Interval
- Photograph Location and Direction

NORTH



OVERVIEW OF PROJECT

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0 75 150 Feet

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CINCINNATI, HAMILTON COUNTY, OHIO

THREATENED AND ENDANGERED SPECIES HABITAT ASSESSMENT MAP

DRAWN BY:	DMG	CHECKED BY:	JAV	APPROVED BY:	JAV*	FIGURE NO:
DATE:	OCTOBER 24, 2016	DWG SCALE:	1 " = 75 '	PROJECT NO:	153-230	6

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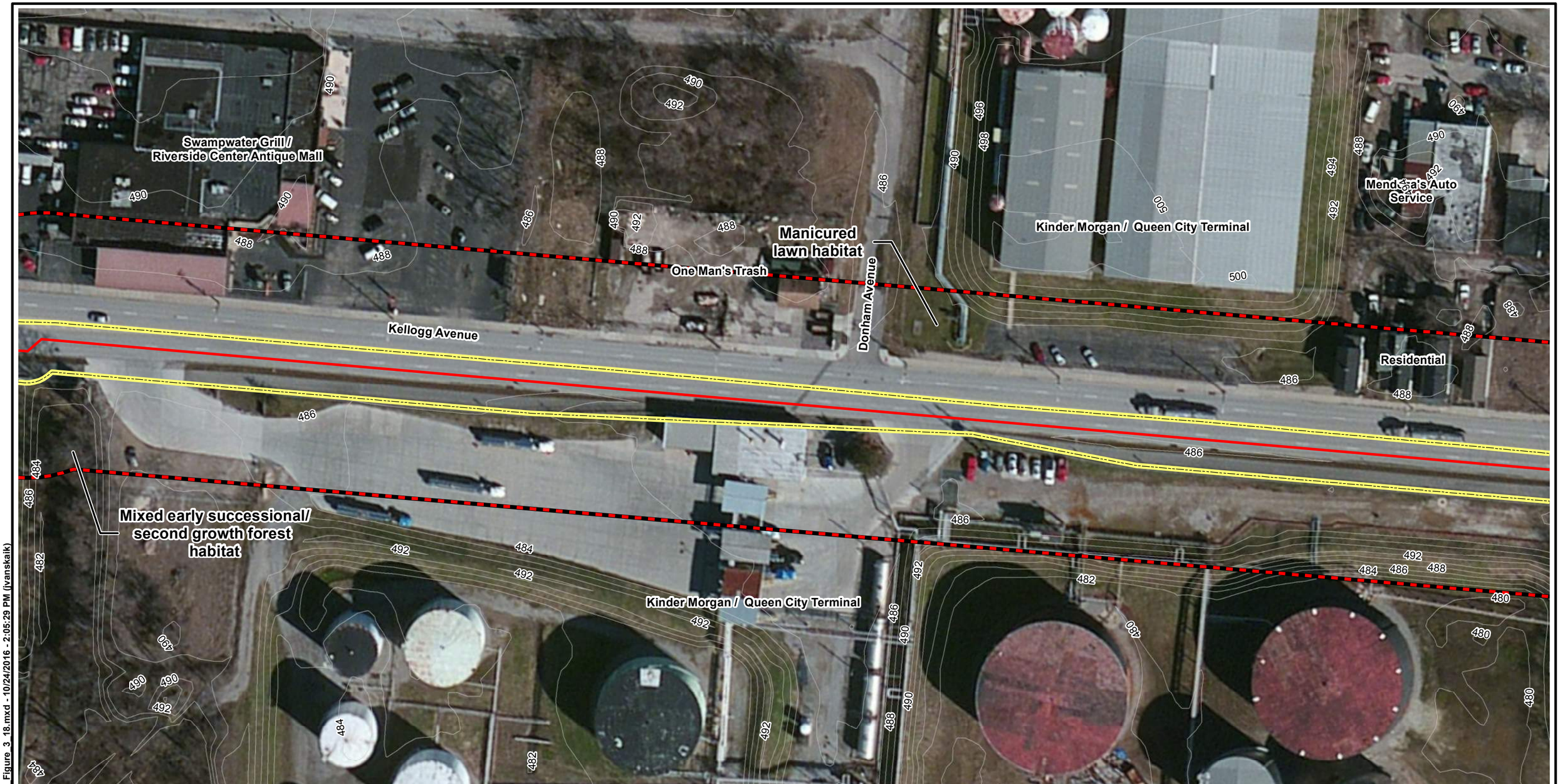


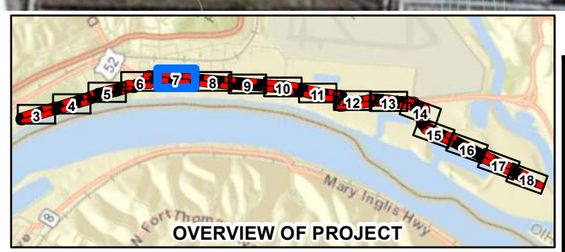
Proposed Replacement Pipeline
Variable Width Study Corridor
Proposed Limit-of-Disturbance

Delineated Wetland

Palustrine Emergent (PEM)
Palustrine Forested (PFO)
Potential Indiana Bat\
Northern Long-Eared Bat
Roost Tree

Potential Running Buffalo
Clover Habitat
Ohio River or
Backwater Area
Existing Culvert
2-Foot Contour Interval
Photograph Location
and Direction

NORTH



OVERVIEW OF PROJECT

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0 75 150 Feet

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THREATENED AND ENDANGERED SPECIES
HABITAT ASSESSMENT MAP

DRAWN BY:	DMG	CHECKED BY:	JAV	APPROVED BY:	JAV*	FIGURE NO:
DATE:	OCTOBER 24, 2016	DWG SCALE:	1 " = 75 '	PROJECT NO:	153-230	7

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- Proposed Replacement Pipeline
- Variable Width Study Corridor
- Proposed Limit-of-Disturbance

Delineated Wetland

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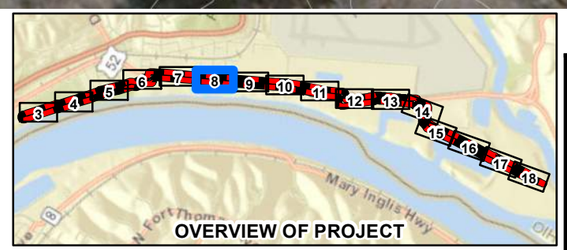
- Photograph Location and Direction

NORTH



OVERVIEW OF PROJECT

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THREATENED AND ENDANGERED SPECIES HABITAT ASSESSMENT MAP

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DATE:	OCTOBER 24, 2016	DWG SCALE:	1 " = 75 '	PROJECT NO:	153-230	8

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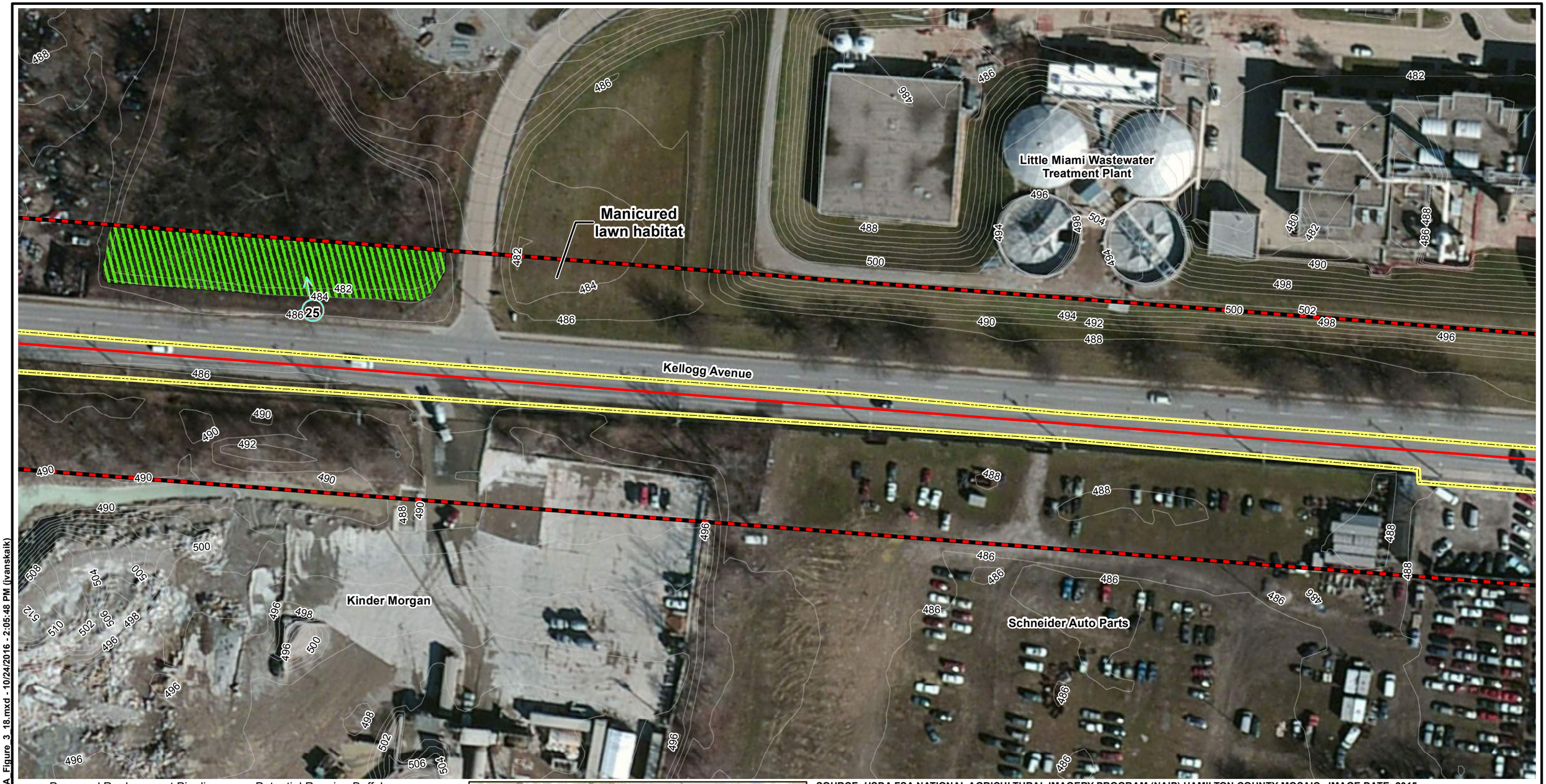


Proposed Replacement Pipeline
Variable Width Study Corridor
Proposed Limit-of-Disturbance

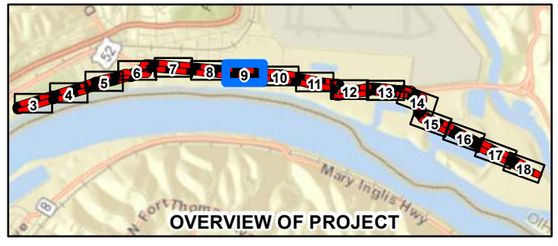
Delineated Wetland

Palustrine Emergent (PEM)
Palustrine Forested (PFO)

Potential Indiana Bat\
Northern Long-Eared Bat
Roost Tree

Potential Running Buffalo Clover Habitat
Ohio River or Backwater Area
Existing Culvert
2-Foot Contour Interval
Photograph Location and Direction

NORTH



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THREATENED AND ENDANGERED SPECIES HABITAT ASSESSMENT MAP

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DATE:	OCTOBER 24, 2016	DWG SCALE:	1 " = 75 '	PROJECT NO:	153-230	9

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