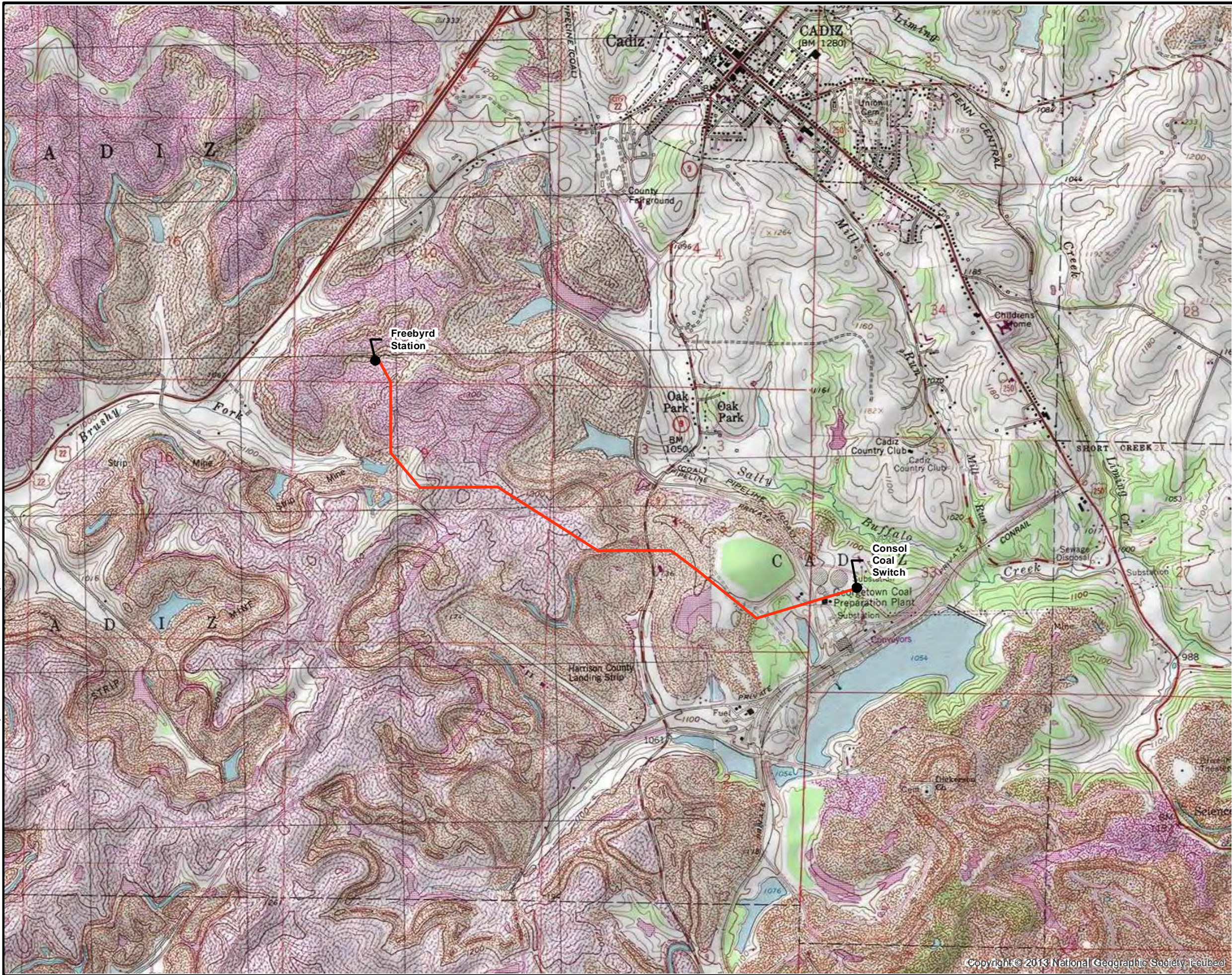
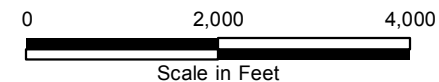


J:\Project\AEP\60445078 Freebyrd-South Cadiz\Data-Tech\GIS\Freebyrd-Consol_coal_LON_Fig1.mxd Date: 7/18/2016



- LEGEND:
- Freebyrd-Consol Coal Centerline
 - Existing Station



AEP OHIO TRANSMISSION COMPANY Freebyrd-Consol Coal
138 kV Transmission Line

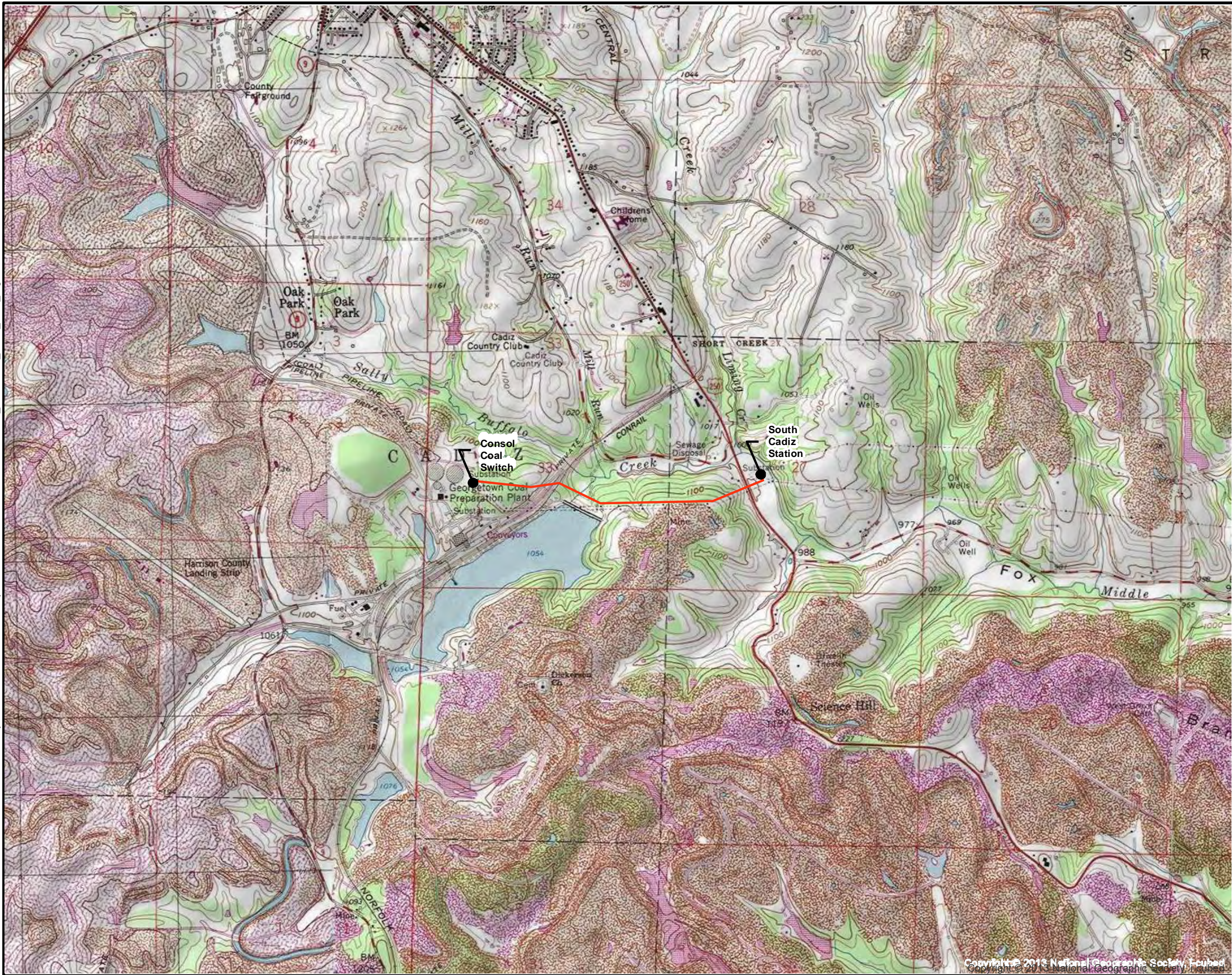
FIGURE 1.1
PROJECT OVERVIEW

Copyright © 2013 National Geographic Society, I-cubed

JOB NO. 60445078

AECOM

J:\Project\A\EP\60445078 Freebyrd-South Cadiz\Data-Tech\GIS\Consol_coal-south_cadiz_LON_Fig1.mxd Date: 7/18/2016



LEGEND:
— Consol Coal-South Cadiz Centerline
● Existing Station



0 2,000 4,000
Scale in Feet

AEP OHIO TRANSMISSION COMPANY Consol Coal-South Cadiz
138 kV Transmission Line

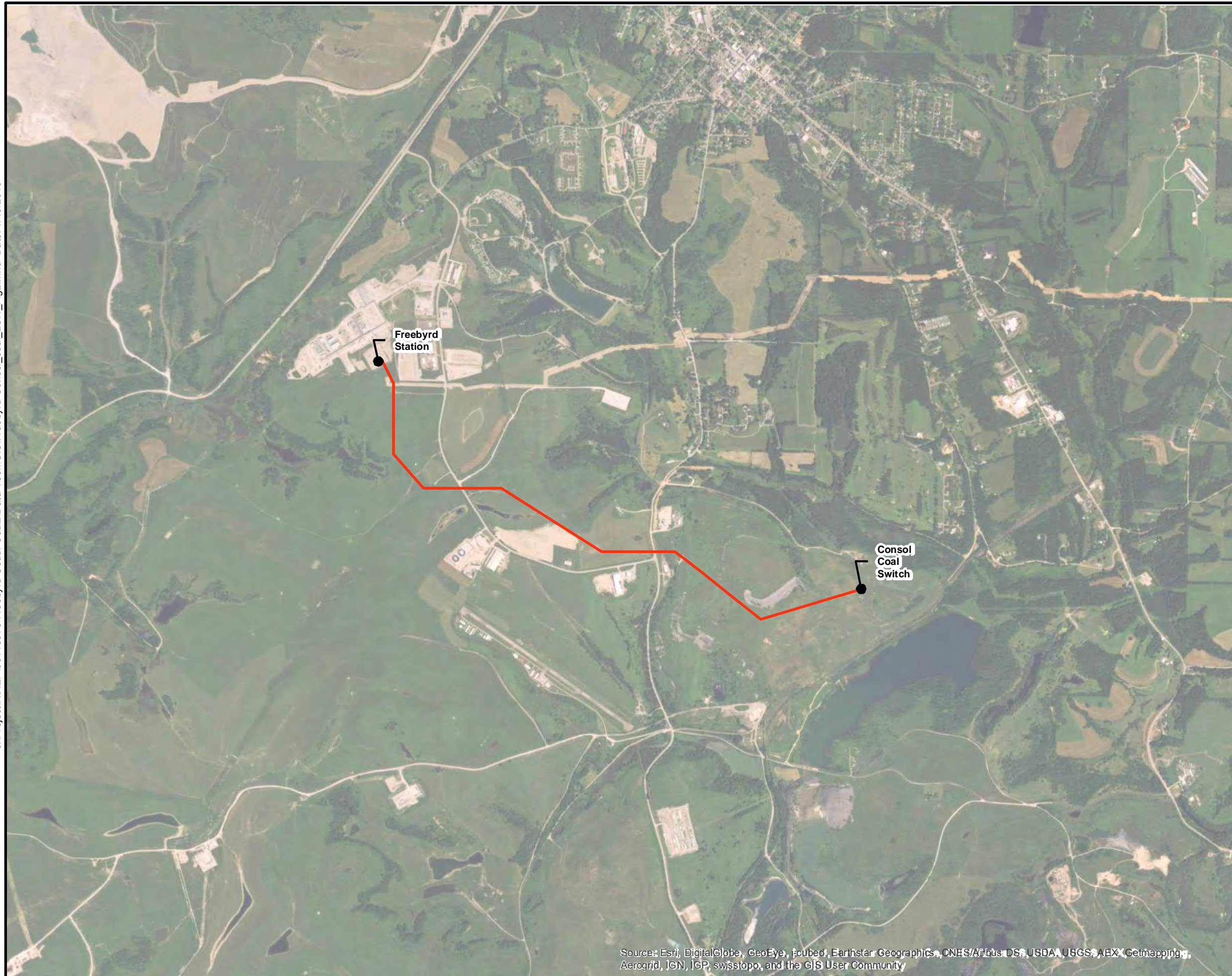
FIGURE 1.2
PROJECT OVERVIEW

Copyright © 2013 National Geographic Society. All rights reserved.
Copyright © 2013 National Geographic Society. All rights reserved.



JOB NO. 60445078

J:\Project\AAEP\60445078 Freebyrd-South Cadiz\Data-Tech\GIS\Freebyrd-Consol_coal_LON_Fig2.mxd Date: 7/18/2016



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, IGP, swisstopo, and the GIS User Community



LEGEND:
— Freebyrd-Consol Coal Centerline
● Existing Station



0 2,000 4,000
Scale in Feet



Freebyrd-Consol Coal
138 kV Transmission Line

FIGURE 1.3
AERIAL PHOTOGRAPHY OF
THE PROJECT VICINITY

JOB NO. 60445078





LEGEND:
— Consol Coal-South Cadiz Centerline
● Existing Station



0 2,000 4,000
Scale in Feet

AEP OHIO TRANSMISSION COMPANY Consol Coal-South Cadiz
138 kV Transmission Line

FIGURE 1.4
AERIAL PHOTOGRAPHY OF
THE PROJECT VICINITY

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, IGP, swisstopo, and the GIS User Community

APPENDIX A

SOCIOECONOMIC, LAND USE, AND AGRICULTURAL DISTRICT REVIEW REPORT

Please note that this report was divided into two sections.
Freebyrd-Consol Coal and
Consol Coal-S Cadiz.

FREEBYRD – CONSOL COAL 69 KV TO 138 KV TRANSMISSION LINE CONVERSION PROJECT, HARRISON COUNTY, OHIO

SOCIOECONOMIC, LAND USE, AND AGRICULTURAL DISTRICT REVIEW REPORT

Prepared for:

American Electric Power Ohio Transmission Company
700 Morrison Road
Gahanna, Ohio 45230



Prepared by:



525 Vine Street, Suite 1800
Cincinnati, Ohio 45202

Project #: 60445078

July 2016

TABLE OF CONTENTS

1.0	PROJECT DESCRIPTION	1
2.0	GENERAL LAND USE DESCRIPTION	1
3.0	AGRICULTURAL DISTRICT LAND	2
4.0	CONCLUSION.....	2

FIGURES (follow text)

Number

FIGURE 1 LAND USE MAP

1.0 PROJECT DESCRIPTION

This document presents the socioeconomic, land use, and agricultural district review conducted by AECOM for American Electric Power Ohio Transmission Company's (AEP Ohio Transco) proposed Freebyrd-Consol Coal 69 kV to 138 kV Transmission Line Conversion Project (Project). AEP Ohio Transco is proposing to convert approximately 2.5 miles of the existing Freebyrd-Consol Coal 69 kV line in Harrison County, Ohio to operation at 138 kV.

As part of the Ohio Power Siting Board (OPSB) Letter of Notification (LON) requirements, AEP Ohio Transco is required to assess and report the socioeconomic, land use, and agricultural district characteristics potentially affected by the Project, as stated in Ohio Administrative Code (OAC) Rule 4906-6-05(B)(10)(a) and (b). These rules state:

(10) The applicant shall describe the social and ecological impacts of the project.

- (a) Provide brief, general description of land use within the vicinity of the proposed project, including a list of municipalities, townships, and counties affected.*
- (b) Provide the acreage and a general description of all agricultural land and separately all agricultural district land, existing at least sixty days prior to submission of the application within the potential disturbance area of the project.*

AEP Ohio Transco retained AECOM to conduct a desktop review of socioeconomic, land use, and agricultural district land characteristics. A study corridor was established within 1,000 feet of each side of the line to be rebuilt, resulting in a 2,000-foot wide study corridor. In conjunction with ecological field surveys for the Project, AECOM noted land uses crossed by the Project. This report will be used to assist AEP Ohio Transco's efforts to avoid or minimize impacts to socioeconomic characteristics and land uses potentially present in the study area during construction activities.

2.0 GENERAL LAND USE DESCRIPTION

Land use within the study area is shown on Figure 1. Current land use characteristics were obtained through review of aerial photography taken in 2013; the United States Geological Survey (USGS) 7.5-minute topographic map of Jewett (1978), Flushing (1978), and Harrisville (1985), Ohio quadrangles; parcel GIS files of the Project area; and a field reconnaissance conducted in October 2015 and July 2016.

The Project vicinity is a rural area that is primarily reclaimed mining land used as pasture, but developing for industrial use due to natural gas processing. The primary land uses within the 2,000-foot wide study corridor include agricultural land and reclaimed mining land, with one identified residence. Transportation and utility corridors are also present.

The 2,000-foot wide study corridor is completely within Harrison County, with portions in both the Village of Cadiz and Cadiz Township. General land use trends in the area suggest some conversion of farmland and other open land into industrial usage. Minimal growth is expected in the immediate Project vicinity.

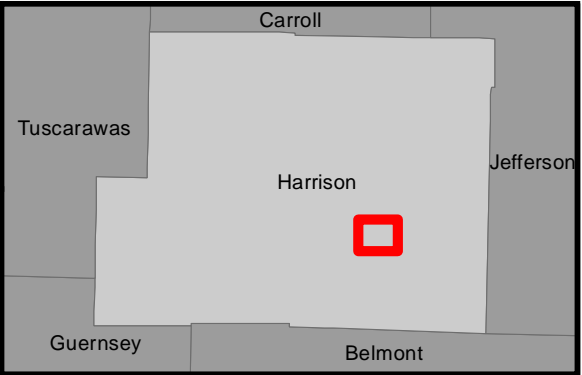
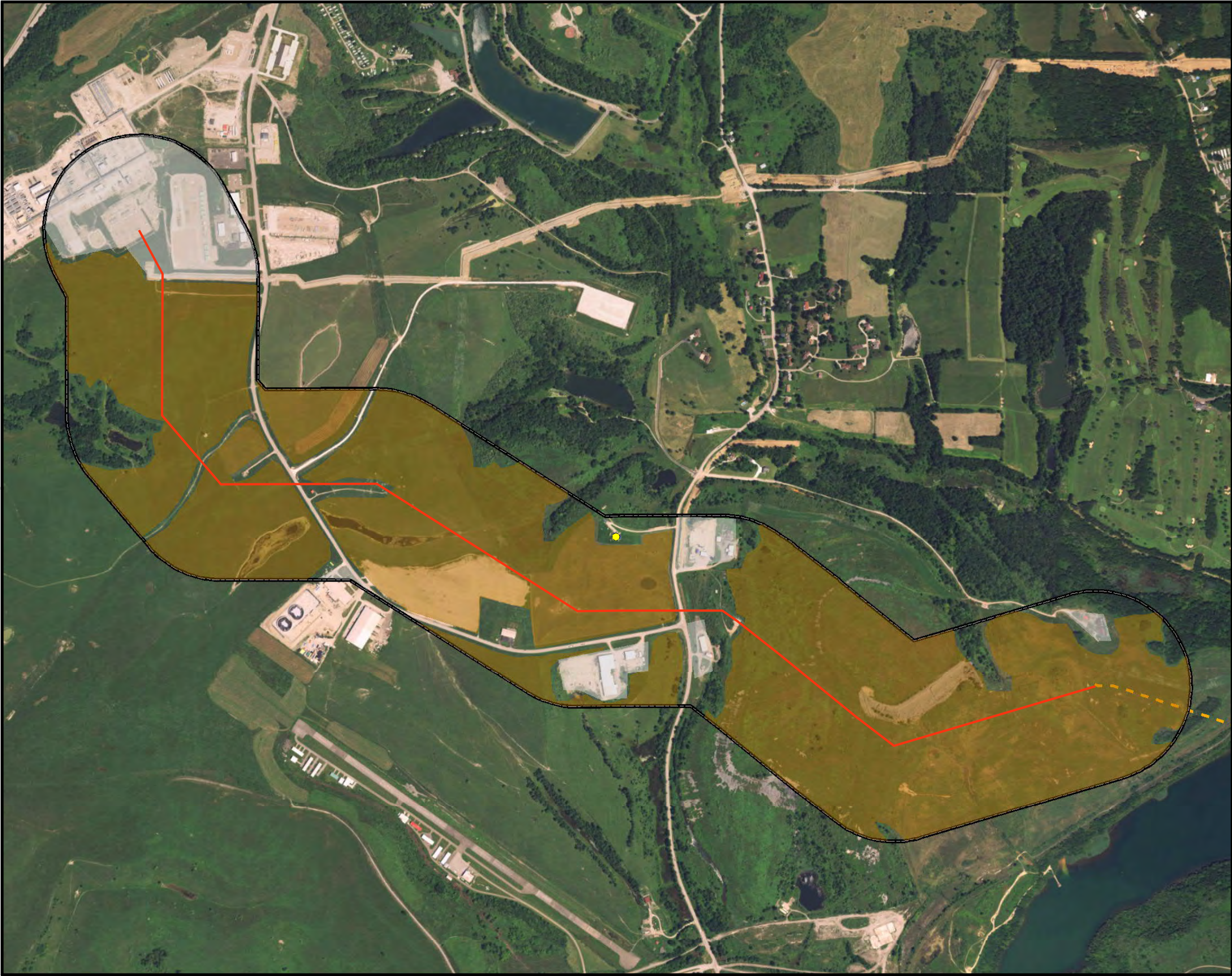
3.0 AGRICULTURAL DISTRICT LAND

The Project vicinity is primarily rural with rolling hills. Topography and the former use as mining land limit agricultural use. Most agricultural land in the project vicinity is pasture land or hay fields, although much is left fallow as reclaimed mining land. Based on information provided by the Harrison County Auditor's Office, no agricultural district land parcels were identified within 1,000 feet of the Project. As a conversion project within existing right-of-way, impacts to agricultural land uses are expected to be minimal. Access roads necessary to construct the Project may temporarily impact agricultural uses. AEP Ohio Transco will work with property owners to compensate for temporary impacts to agricultural land. No permanent impacts to agricultural land or agricultural district land parcels are anticipated.

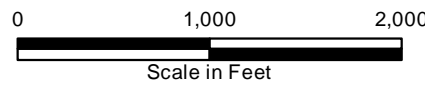
4.0 CONCLUSION

The Project is not expected to significantly impact current socioeconomic characteristics, land use, or agricultural district land in the vicinity. The Project is not expected to negatively impact any future land use plans for the area.

J:\Project\VAEP\60445078 Freebyrd-South Cadiz\Data-Tech\GIS\Freebyrn-Consol\Coal_LandUseMap.mxd Date: 7/19/2016




- LEGEND:
- Proposed Transmission Line Centerline
 - 2,000-foot Study Area
 - Commercial/Industrial Land Use
 - Residence
 - Agricultural/Pasture Land
 - Existing Transmission Line



Base Map:
<http://www.esri.com/software/arcgis/arcgisonline/bing-maps.html>



Freebyrd-Consol Coal
138 kV Transmission Line

FIGURE 1 LAND USE MAP	
DATE: 7/19/2016	SCALE: 1:12,000
CREATED BY: SJJ	CHECKED BY: ARG
JOB NO. 60445078	

CONSOL COAL – SOUTH CADIZ 138 KV TRANSMISSION LINE REBUILD PROJECT, HARRISON COUNTY, OHIO

SOCIOECONOMIC, LAND USE, AND AGRICULTURAL DISTRICT REVIEW REPORT

Prepared for:

American Electric Power Ohio Transmission Company
700 Morrison Road
Gahanna, Ohio 45230



Prepared by:



525 Vine Street, Suite 1800
Cincinnati, Ohio 45202

Project #: 60445078

August 2016

TABLE OF CONTENTS

1.0	PROJECT DESCRIPTION	1
2.0	GENERAL LAND USE DESCRIPTION	1
4.0	AGRICULTURAL DISTRICT LAND	2
5.0	CONCLUSION.....	2

FIGURES (follow text)

Number

FIGURES 1 LAND USE MAP

1.0 PROJECT DESCRIPTION

This document presents the socioeconomic, land use, and agricultural district review conducted by AECOM for American Electric Power Ohio Transmission Company's (AEP Ohio Transco) proposed Consol Coal-South Cadiz 138 kV Transmission Line Rebuild Project (Project). AEP Ohio Transco is proposing to rebuild approximately 1.2 miles of the existing Consol Coal-South Cadiz 138 kV transmission line in Harrison County, Ohio.

As part of the Ohio Power Siting Board (OPSB) Letter of Notification (LON) requirements, AEP Ohio Transco is required to assess and report the socioeconomic, land use, and agricultural district characteristics potentially affected by the Project, as stated in Ohio Administrative Code (OAC) Rule 4906-6-05(B)(10)(a) and (b). These rules state:

(10) The applicant shall describe the social and ecological impacts of the project.

- (a) Provide brief, general description of land use within the vicinity of the proposed project, including a list of municipalities, townships, and counties affected.*
- (b) Provide the acreage and a general description of all agricultural land and separately all agricultural district land, existing at least sixty days prior to submission of the application within the potential disturbance area of the project.*

AEP Ohio Transco retained AECOM to conduct a desktop review of socioeconomic, land use, and agricultural district land characteristics. A study corridor was established within 1,000 feet of each side of the line to be rebuilt, resulting in a 2,000-foot wide study corridor. In conjunction with ecological field surveys for the Project, AECOM noted land uses crossed by the Project. This report will be used to assist AEP Ohio Transco's efforts to avoid or minimize impacts to socioeconomic characteristics and land uses potentially present in the study area during construction activities.

2.0 GENERAL LAND USE DESCRIPTION

Land use within the study area is shown on Figure 1. Current land use characteristics were obtained through review of aerial photography taken in 2013; the United States Geological Survey (USGS) 7.5-minute topographic map of Harrisville (1985), Ohio quadrangles; parcel GIS files of the Project area; and a field reconnaissance conducted in July 2016.

The Project vicinity is a rural area with little developed land present. The primary land uses within the 2,000-foot wide study corridor include agricultural land and woodlots. Transportation and utility corridors are also present.

The 2,000-foot wide study corridor is completely within Harrison County. General land use trends in the area suggest some conversion of farmland and other open land into industrial usage, predominantly for the oil and gas industry. Minimal growth is expected in the immediate Project vicinity.

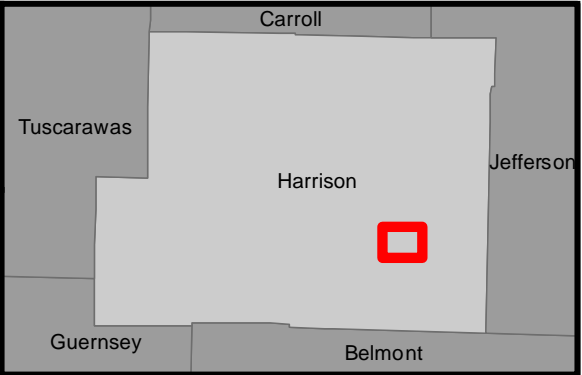
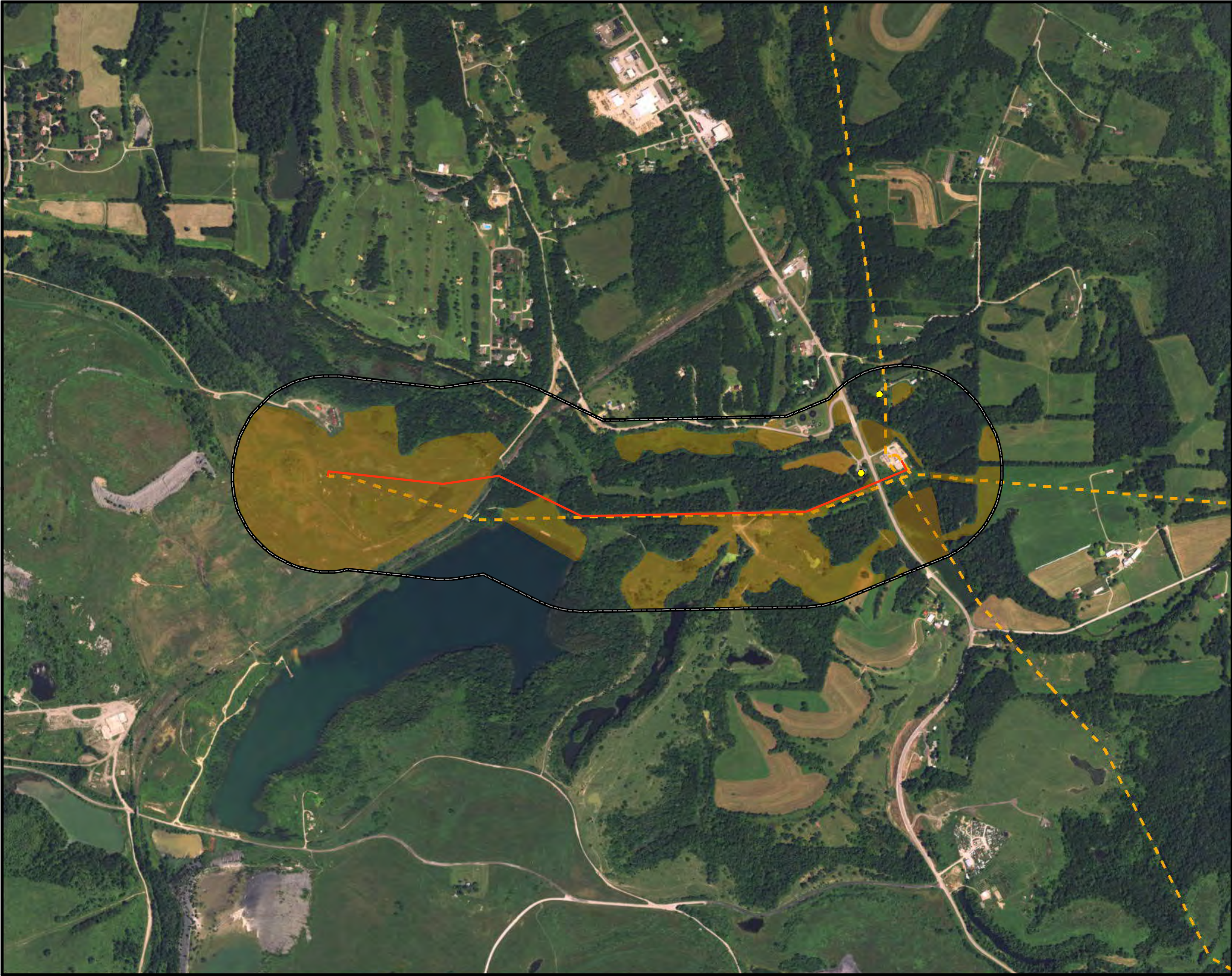
3.0 AGRICULTURAL DISTRICT LAND

The Project vicinity is primarily rural with rolling hills. Most agricultural land in the project vicinity is pasture land or hay fields, although some limited row crops were observed. Based on information provided by the Harrison County Auditors' offices, no agricultural district land parcels were identified within 1,000 feet of the Project. No impacts to agricultural land or agricultural district land parcels are anticipated.

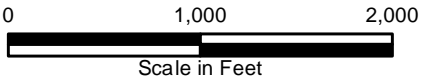
4.0 CONCLUSION

The Project is not expected to significantly impact current socioeconomic characteristics, land use, or agricultural district land in the vicinity. The Project is not expected to negatively impact any future land use plans for the area.

J:\Project\AEP\60445078 Freebyrd-South Cadiz\South Cadiz-Tech\GIS\ConsolCoal-SouthCadiz_LandUseMap.mxd Date: 8/8/2016



- LEGEND:
- Proposed Centerline
 - 1000-foot Study Area
 - Residence
 - Agricultural/Pasture Land
 - Existing Electric Transmission Line



Base Map:
<http://www.esri.com/software/arcgis/arcgisonline/bing-maps.html>

AEP OHIO TRANSMISSION COMPANY *Consol Coal-South Cadiz 138 kV Transmission Line*

FIGURE 1
LAND USE MAP

DATE: 8/8/2016	SCALE: 1:12,000
CREATED BY: SJJ	CHECKED BY: ARG
JOB NO. 60445078	AECOM

APPENDIX B

THREATENED AND ENDANGERED SPECIES SURVEY REPORT

Please note that this report was divided into two sections.
Freebyrd-Consol Coal and
Consol Coal-S Cadiz.

FREEBYRD-CONSOL COAL 138 KV TRANSMISSION LINE REBUILD PROJECT, HARRISON COUNTY, OHIO

RARE, THREATENED, AND ENDANGERED SPECIES SURVEY REPORT

Prepared for:

American Electric Power Ohio Transmission Company
700 Morrison Road
Gahanna, Ohio 43230



Prepared by:



525 Vine Street, Suite 1800
Cincinnati, Ohio 45202

Project #: 60445078

August 2016

TABLE OF CONTENTS

1.0	PROJECT DESCRIPTION.....	1
2.0	METHODS.....	1
3.0	AGENCY COORDINATION.....	2
3.1	State Species of Concern	2
3.2	Federal Species of Concern	3
4.0	FIELD SURVEY RESULTS	4
5.0	SUMMARY	4
6.0	CONCLUSION	4

TABLES

Number

TABLE 1	STATE LISTED SPECIES THAT COULD INHABIT HARRISON COUNTY, OHIO.....	2
TABLE 2	FEDERALLY LISTED SPECIES THAT COULD INHABIT HARRISON COUNTY, OHIO.....	4

FIGURES

Number

FIGURE 1	PROJECT OVERVIEW
----------	------------------

ATTACHMENT

Number

ATTACHMENT A	AGENCY RESPONSES
--------------	------------------

1.0 PROJECT DESCRIPTION

This document presents the results of the rare, threatened, and endangered species assessment conducted by AECOM for American Electric Power Ohio Transmission Company's (AEP Ohio Transco) Freebryd-Consol Coal 138 kV Transmission Line Rebuild Project (Project). AEP Ohio Transco is proposing to rebuild approximately 2.5 miles of the existing Freebryd-Consol Coal 69 kV transmission line and convert to a new 138 kV transmission line in Harrison County, Ohio, within its existing right-of-way (ROW).

As part of the Ohio Power Siting Board (OPSB) Letter of Notification (LON) requirements, AEP Ohio Transco is required to assess and report the federal and state designated species potentially affected by the Project, as stated in Ohio Administrative Code (OAC) Rule 4906-6-05(B)(10)(e). This rule states:

(10) The applicant shall describe the social and ecological impacts of the project:

(e) Provide a description of the applicant's investigation concerning the presence or absence of federal and state designated species (including endangered species, threatened species, rare species, species proposed for listing, species under review for listing, and species of special interest) that may be located within the potential disturbance area of the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

AEP retained AECOM to conduct rare, threatened, and endangered species review and field surveys within areas crossed by the Project ROW. This report will be used to assist AEP Ohio Transco's efforts to avoid impacts to threatened and endangered species potentially present in the survey area during construction activities.

2.0 METHODS

The first phase of the survey involved a review of online lists of federal and state species of concern. In addition to the review of available literature, AECOM submitted a request to Ohio Department of Natural Resources (ODNR) Ohio Natural Heritage Database (ONHD) for Geographical Information System (GIS) records of species of concern that were reported within close proximity to the Project. AECOM also submitted coordination letters to the U.S. Fish and Wildlife Service (USFWS) and ODNR – Office of Real Estate soliciting comments on the Project. Agency-identified species and available species-specific information was reviewed to identify the various habitat types that listed species are known to frequent. AECOM field ecologists conducted a general habitat survey in conjunction with the stream and wetland field survey on October 7, 2015. The 200-foot survey corridor was generally observed to be an existing electric transmission right-of-way.

3.0 AGENCY COORDINATION

3.1 State Species of Concern

In an email dated February 3, 2016, ODNR provided a corresponding response to a request for ONHD GIS records including specific comments regarding the Project. The ONHD review indicated that no records of rare or endangered species were found within a one-mile radius of the Project. Additionally, no state or federal wildlife areas, nature preserves, conservation areas, parks, scenic rivers, or other protected natural areas are within a one mile radius of the Project area. A copy of the letter indicating Ohio Natural Heritage Database records as well as ODNR comments is included in Attachment A.

AECOM submitted a coordination letter to USFWS on July 11, 2016, soliciting comments on the Project. AECOM has not received a response regarding the Project from ODNR to date. Based on recent responses to similar projects within Harrison County, ODNR has indicated that the Indiana bat (*Myotis sodalis*), black bear (*Ursus americanus*), and upland sandpiper (*Bartramia longicauda*), are potentially within the range of Project area. Should additional information become available from ODNR, which differs significantly from the above listed species, an addendum report will be provided. A copy of the ODNR ONHD response is included in Attachment A. Table 1 lists the species expected to be identified by ODNR with ranges in the project area.

**TABLE 1
STATE LISTED SPECIES THAT COULD INHABIT
HARRISON COUNTY, OHIO**

Common Name	Scientific Name	State Status
Mammals		
Indiana bat	<i>Myotis sodalis</i>	Endangered
Black bear	<i>AECOMus americanus</i>	Endangered
Birds		
Upland sandpiper	<i>Bartramia longicauda</i>	Endangered

Indiana bat comments: On recent projects within Harrison County, ODNR requested that suitable Indiana bat habitat should be conserved or cut between October 1 and March 31. A net survey must be conducted between June 15 and August 15 prior to cutting, if clearing is necessary during summer months.

Black bear comments: On recent projects within Harrison County, ODNR stated that due to the location, type of habitat present along the existing ROWs, and the type of work proposed, the Project is not likely to impact the black bear.

Upland Sandpiper comments:

On recent projects within Harrison County, ODNR requested that habitat for the upland sandpiper, dry grasslands including native grasslands, seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through the Conservation Reserve Program, should not be impacted during the species' nesting period of April 15th to July 31st.

3.2 Federal Species of Concern

To address the Project's potential to impact federally protected species, AECOM conducted a web based literature review of the USFWS Ohio County Distribution List of *Federally Listed Species by Ohio Counties, April 2015*, a table that is publicly available on their website, to identify what species potentially occur in Harrison County, Ohio. Table 2 lists the two species identified during the USFWS literature review.

**TABLE 2
FEDERALLY LISTED SPECIES THAT COULD INHABIT
HARRISON COUNTY, OHIO**

Common Name	Scientific Name	Federal Status	General Notes
<i>Mammals</i>			
Indiana bat	<i>Myotis sodalis</i>	Endangered	Seasonal clearing restrictions
Northern long-eared bat	<i>Myotis septentrionalis</i>	Threatened	Seasonal clearing restrictions

Federally Listed Species by Ohio Counties, November, 2015.

Accessed July 22, 2016:

<https://www.fws.gov/midwest/endangered/lists/ohio-cty.html>

AECOM submitted a coordination letter to USFWS on July 11, 2016, soliciting comments on the Project. In a letter to AECOM dated July 21, 2016, USFWS indicated that the Project was within the ranges of the Indiana bat and northern long-eared bat. USFWS' comments regarding the identified species are further described below. A copy of the USFWS letter response is included in Attachment A.

Indiana Bat and Northern Long-Eared Bat: The federal government lists the Indiana bat as endangered in Ohio. Winter Indiana bat hibernacula include caves and mines, while summer habitat typically includes tree species exhibiting exfoliating bark or cavities that can be used for roosting. The 8- to 10-inch diameter size classes of several species of hickory (*Carya* spp.), oak (*Quercus* spp.), ash (*Fraxinus* spp.), birch (*Betula* spp.), and elm (*Ulmus* spp.) have been found to be utilized by the Indiana bat. These tree species and many others may be used when dead, if there are adequately sized patches of loosely-adhering bark or open cavities. The structural configuration of forest stands favored for roosting includes a mixture of loose-barked trees with 60 to 80 percent canopy closure and a low density sub-canopy (less than 30 percent between about 6 feet high and the base canopy). The suitability of roosting habitat for foraging or the proximity to suitable foraging habitat is critical to the evaluation of a particular tree stand. An open subcanopy zone, under a moderately dense canopy, is important to allow maneuvering while catching insect prey. Proximity to water is critical, because insect prey density is greater over or near

open water. The Project corridor is an existing electric transmission line right-of-way and associated preliminary construction access roads.

The federal government lists the northern long-eared bat species as Threatened in Ohio. As with the Indiana bat, winter northern long-eared bat hibernacula include caves and mines, while summer habitat typically includes tree species exhibiting exfoliating bark or cavities that can be used for roosting. Northern long-eared bat has also been found, albeit rarely, roosting in structures like barns and sheds.

AEP proposes to cut identified Indiana bat habitat trees between October 1st and March 31st to minimize potential impacts to the Indiana bat and other bat species. USFWS indicated that due to the project type, size, location, and the proposed implementation of seasonal tree cutting (clearing of trees ≥ 3 inches diameter at breast height between October 1 and March 31) to avoid impacts to Indiana bats and northern long-eared bats, USFWS does not anticipate adverse effects to any federally endangered, threatened, proposed or candidate species.

4.0 FIELD SURVEY RESULTS

During the field survey on October 7, 2015, AECOM biologists identified an osprey and nest located approximately 1,600 feet from the Freebryd-Consol Coal project. The osprey nest was located on top of an existing transmission line tower near a small lake in the vicinity of the Project. The osprey is not listed as either a federal or state listed species; however, the species is protected by the Migratory Bird Treaty Act. No additional species of concern or signs of these species, and no unique habitats were observed.

5.0 SUMMARY

AEP retained AECOM to conduct a rare, threatened, and endangered species literature review for areas located within 1,000 feet of the proposed Project, a field survey within the proposed Project 200-foot survey corridor, and conduct coordination with USFWS, ONHD and ODNR. This report will be used to assist AEP's efforts to avoid impacts to rare, threatened, and endangered species potentially present in the ROW during construction activities. The field survey was conducted by AECOM field ecologists on October 7, 2015. No species of concern or signs of these species, and no unique habitats were observed. During the field survey, AECOM biologists identified an osprey and nest located approximately 1,600 feet from the Freebryd-Consol Coal project.

6.0 CONCLUSION

Based upon the nature of the Project, review of available current literature, review of federal and state records of species of concern, and review of agency correspondence, it is not anticipated that federal or state species of concern will be impacted by the Project as currently planned (see below). AEP has worked to develop a construction access plan that contains the least amount of impact to sensitive resources (wetlands, streams, etc.), as well as minimizing impacts to threatened and endangered species habitat that may be present along the alignment.

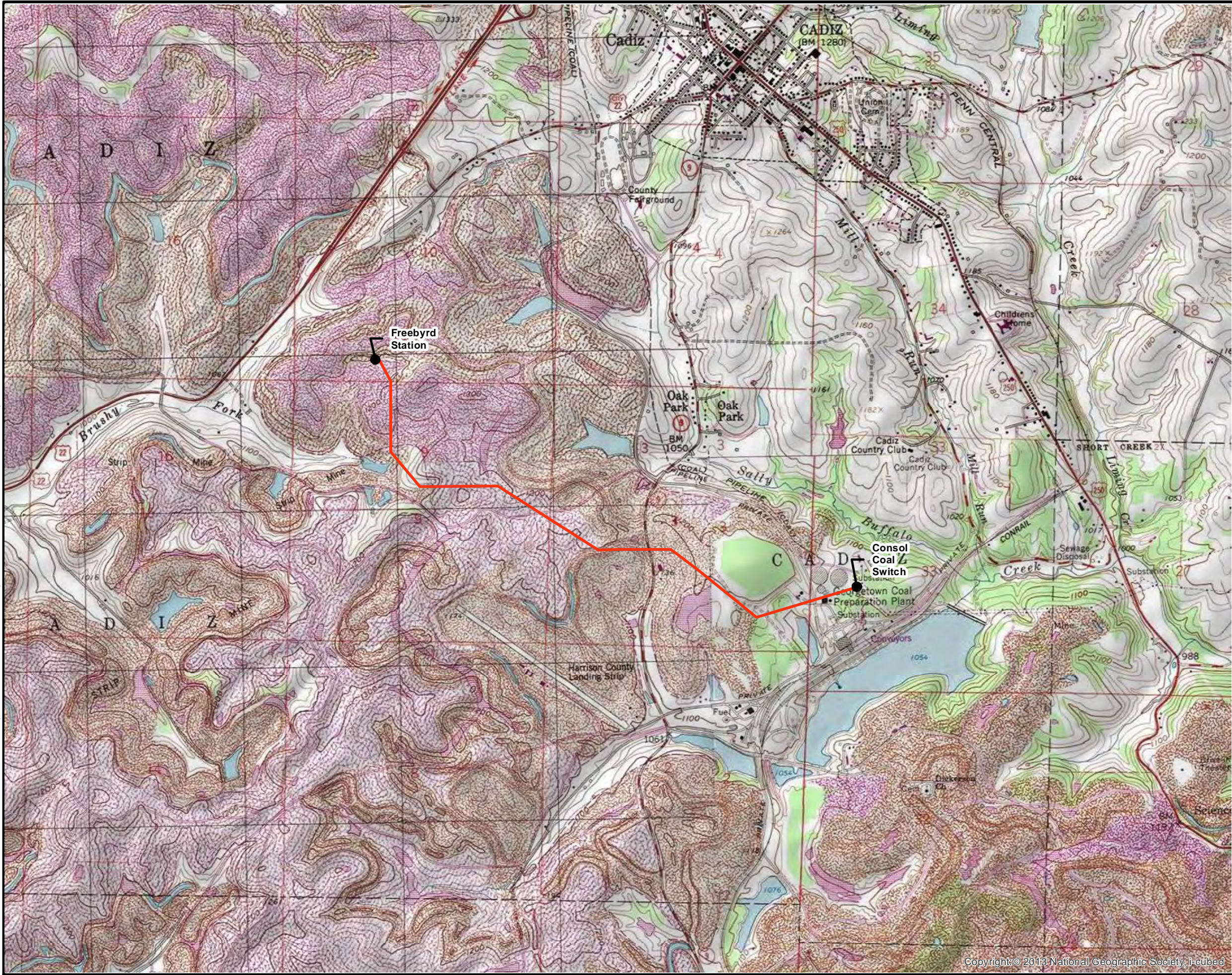
AECOM submitted a coordination letter to USFWS on July 11, 2016, soliciting comments on the Project. AECOM has not received a response regarding the Project from ODNR to date. Should additional information become available from ODNR, which differs significantly from the above listed species, an addendum report will be provided.

AEP proposes to cut identified Indiana bat habitat trees between October 1st and March 31st to minimize potential impacts to the Indiana bat and other bat species. USFWS indicated that due to the project type, size, location, and the proposed implementation of seasonal tree cutting (clearing of trees ≥ 3 inches diameter at breast height between October 1st and March 31st) to avoid impacts to Indiana bats and northern long-eared bats, USFWS does not anticipate adverse effects to any federally endangered, threatened, proposed or candidate species.

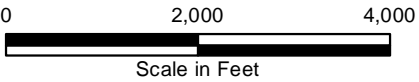
Based on recent projects within Harrison County, ODNR requested that habitat for the upland sandpiper, dry grasslands including native grasslands, seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through the Conservation Reserve Program, should not be impacted during the species' nesting period of April 15th to July 31st. AEP Ohio Transco currently intends to comply with the seasonal construction restriction for vegetation clearing and grading within the proposed right-of-way. However, if construction must occur during the nesting period, a qualified biologist will complete a presence/absence survey based on the most current ODNR protocol.

During the field survey on October 7, 2015, AECOM biologists identified an osprey and nest located approximately 1,600 feet from the Freebryd-Consol Coal project. The osprey nest was located on top of an existing transmission line tower near a small lake in the vicinity of the Project. The osprey is not listed as either a federal or state listed species; however, the species is protected by the Migratory Bird Treaty Act. To avoid impacting this species, AEP will utilize best management practices and avoid this area by using construction fencing with inclusion into the SWPPP.

J:\Project\A\AEP\60445078 Freebyrd-South Cadiz\Data-Tech\GIS\Freebyrd-Consol_coal_LON_Fig1.mxd Date: 7/18/2016



- LEGEND:
- Freebyrd-Consol Coal Centerline
 - Existing Station



AEP OHIO TRANSMISSION COMPANY Freebyrd-Consol Coal
138 kV Transmission Line

FIGURE 1.1
PROJECT OVERVIEW

Copyright © 2013 National Geographic Society, I-cubed

JOB NO. 60445078



ATTACHMENT A

AGENCY RESPONSES



Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

Ohio Division of Wildlife
Raymond W. Petering, Chief
2045 Morse Rd., Bldg. G
Columbus, OH 43229-6693
Phone: (614) 265-6300

February 3, 2016

Beth Wilburn
AECOM
525 Vine St.
Cincinnati, OH 45239

Dear Ms. Wilburn,

After reviewing the Natural Heritage Database, I find the Division of Wildlife has no records of rare or endangered species in the Freebyrd-South Cadiz 138 kV Line project area, including a one mile radius, in Cadiz and Short Creek Townships, Harrison County, Ohio. We are unaware of any unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, nature preserves, parks or forests, national wildlife refuges, parks or forests or other protected natural areas within a one mile radius of the project area.

Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. This letter only represents a review of rare species and natural features data within the Ohio Natural Heritage Database. It does not fulfill coordination under the National Environmental Policy Act (NEPA) or the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S. C. 661 et seq.) and does 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.

Please contact me at 614-265-6818 if I can be of further assistance.

Sincerely,

A handwritten signature in blue ink that reads "Debbie Woischke".

Debbie Woischke
Ohio Natural Heritage Database Program

Geckle, Aaron

From: susan_zimmermann@fws.gov on behalf of Ohio, FW3 <ohio@fws.gov>
Sent: Thursday, July 21, 2016 12:51 PM
To: Geckle, Aaron
Subject: Freebyrd-Consolidated Coal-South Cadiz 138 kV Project, Harrison Co.



UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service
Ecological Services Office
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / Fax (614) 416-8994



TAILS# 03E15000-2016-TA-1393

Dear Mr. Geckle,

We have received your recent correspondence regarding potential impacts to federally listed species in the vicinity of the above referenced project. There are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. We recommend that proposed activities minimize water quality impacts, including fill in streams and wetlands. Best management practices should be utilized to minimize erosion and sedimentation.

FEDERALLY LISTED, PROPOSED, AND CANDIDATE SPECIES COMMENTS: Due to the project type, size, location, and the proposed implementation of seasonal tree cutting (clearing of trees ≥ 3 inches diameter at breast height between October 1 and March 31) to avoid impacts to Indiana bats and northern long-eared bats, we do not anticipate adverse effects to any 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 U.S. Fish and Wildlife Service (Service) should be initiated to assess any potential impacts.

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 Endangered Species Act (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.

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.), 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". The signature is fluid and cursive, with the first name "Dan" being more prominent than the last name "Everson".

Dan Everson

Field Office Supervisor

CONSOL COAL-SOUTH CADIZ 138 KV TRANSMISSION LINE REBUILD PROJECT, HARRISON COUNTY, OHIO

RARE, THREATENED, AND ENDANGERED SPECIES SURVEY REPORT

Prepared for:

American Electric Power Ohio Transmission Company
700 Morrison Road
Gahanna, Ohio 43230



Prepared by:



525 Vine Street, Suite 1800
Cincinnati, Ohio 45202

Project #: 60445078

August 2016

TABLE OF CONTENTS

1.0	PROJECT DESCRIPTION.....	1
2.0	METHODS	1
3.0	AGENCY COORDINATION	2
3.1	State Species of Concern	2
3.2	Federal Species of Concern	3
4.0	FIELD SURVEY RESULTS	4
5.0	SUMMARY	4
6.0	CONCLUSION	4

TABLES

Number

TABLE 1	STATE LISTED SPECIES THAT COULD INHABIT HARRISON COUNTY, OHIO.....	2
TABLE 2	FEDERALLY LISTED SPECIES THAT COULD INHABIT HARRISON COUNTY, OHIO.....	4

FIGURES

Number

FIGURE 1	PROJECT OVERVIEW
----------	------------------

ATTACHMENT

Number

ATTACHMENT A	AGENCY RESPONSES
--------------	------------------

1.0 PROJECT DESCRIPTION

This document presents the results of the rare, threatened, and endangered species assessment conducted by AECOM for American Electric Power Ohio Transmission Company's (AEP Ohio Transco) Consol Coal-South Cadiz 138 kV Transmission Line Rebuild Project (Project). AEP Ohio Transco is proposing to rebuild approximately 1.2 miles of the existing Consol Coal-South Cadiz 138 kV transmission line in Harrison County, Ohio, primarily within the currently existing right-of-way (ROW) corridor. Approximately 0.5 mile of the project length will be rebuilt outside of existing ROW to improve constructability.

As part of the Ohio Power Siting Board (OPSB) Letter of Notification (LON) requirements, AEP Ohio Transco is required to assess and report the federal and state designated species potentially affected by the Project, as stated in Ohio Administrative Code (OAC) Rule 4906-6-05(B)(10)(e). This rule states:

(10) The applicant shall describe the social and ecological impacts of the project:

(e) Provide a description of the applicant's investigation concerning the presence or absence of federal and state designated species (including endangered species, threatened species, rare species, species proposed for listing, species under review for listing, and species of special interest) that may be located within the potential disturbance area of the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

AEP retained AECOM to conduct rare, threatened, and endangered species review and field surveys within areas crossed by the Project ROW. This report will be used to assist AEP Ohio Transco's efforts to avoid impacts to threatened and endangered species potentially present in the survey area during construction activities.

2.0 METHODS

The first phase of the survey involved a review of online lists of federal and state species of concern. In addition to the review of available literature, AECOM submitted a request to Ohio Department of Natural Resources (ODNR) Ohio Natural Heritage Database (ONHD) for Geographical Information System (GIS) records of species of concern that were reported within close proximity to the Project. AECOM also submitted coordination letters to the U.S. Fish and Wildlife Service (USFWS) and ODNR – Office of Real Estate soliciting comments on the Project. Agency-identified species and available species-specific information was reviewed to identify the various habitat types that listed species are known to frequent. AECOM field ecologists conducted a general habitat survey in conjunction with the stream and wetland field surveys on October 7, 2015 and July 14, 2016. The 200-foot survey corridor was generally observed to be an existing electric transmission right-of-way.

3.0 AGENCY COORDINATION

3.1 State Species of Concern

In an email dated February 3, 2016, ODNR provided a corresponding response to a request for ONHD GIS records including specific comments regarding the Project. The ONHD review indicated that no records of rare or endangered species were found within a one-mile radius of the Project. Additionally, no state or federal wildlife areas, nature preserves, conservation areas, parks, scenic rivers, or other protected natural areas are within a one mile radius of the Project area. A copy of the letter indicating Ohio Natural Heritage Database records as well as ODNR comments is included in Attachment A.

AECOM submitted a coordination letter to USFWS on July 11, 2016, soliciting comments on the Project. AECOM has not received a response regarding the Project from ODNR to date. Based on recent responses to similar projects within Harrison County, ODNR has indicated that the Indiana bat (*Myotis sodalis*), black bear (*Ursus americanus*), and upland sandpiper (*Bartramia longicauda*), are potentially within the range of Project area. Should additional information become available from ODNR, which differs significantly from the above listed species, an addendum report will be provided. A copy of the ODNR ONHD response is included in Attachment A. Table 1 lists the species expected to be identified by ODNR with ranges in the project area.

**TABLE 1
STATE LISTED SPECIES THAT COULD INHABIT
HARRISON COUNTY, OHIO**

Common Name	Scientific Name	State Status
Mammals		
Indiana bat	<i>Myotis sodalis</i>	Endangered
Black bear	<i>Ursus americanus</i>	Endangered
Birds		
Upland sandpiper	<i>Bartramia longicauda</i>	Endangered

Indiana bat comments: On recent projects within Harrison County, ODNR requested that suitable Indiana bat habitat should be conserved or cut between October 1st and March 31st. A net survey must be conducted between June 15th and August 15th prior to cutting, if clearing is necessary during summer months.

Black bear comments: On recent projects within Harrison County, ODNR stated that due to the location, type of habitat present along the existing ROWs, and the type of work proposed, the Project is not likely to impact the black bear.

Upland Sandpiper comments:

On recent projects within Harrison County, ODNR requested that habitat for the upland sandpiper, dry grasslands including native grasslands, seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through the Conservation Reserve Program, should not be impacted during the species' nesting period of April 15th to July 31st.

3.2 Federal Species of Concern

To address the Project's potential to impact federally protected species, AECOM conducted a web based literature review of the USFWS Ohio County Distribution List of *Federally Listed Species by Ohio Counties, April 2015*, a table that is publicly available on their website, to identify what species potentially occur in Harrison County, Ohio. Table 2 lists the two species identified during the USFWS literature review.

**TABLE 2
FEDERALLY LISTED SPECIES THAT COULD INHABIT
HARRISON COUNTY, OHIO**

Common Name	Scientific Name	Federal Status	General Notes
<i>Mammals</i>			
Indiana bat	<i>Myotis sodalis</i>	Endangered	Seasonal clearing restrictions
Northern long-eared bat	<i>Myotis septentrionalis</i>	Threatened	Seasonal clearing restrictions

Federally Listed Species by Ohio Counties, November, 2015.

Accessed July 22, 2016:

<https://www.fws.gov/midwest/endangered/lists/ohio-cty.html>

AECOM submitted a coordination letter to USFWS on July 11, 2016, soliciting comments on the Project. In a letter to AECOM dated July 21, 2016, USFWS indicated that the Project was within the ranges of the Indiana bat and northern long-eared bat. USFWS' comments regarding the identified species are further described below. A copy of the USFWS letter response is included in Attachment A.

Indiana Bat and Northern Long-Eared Bat: The federal government lists the Indiana bat as endangered in Ohio. Winter Indiana bat hibernacula include caves and mines, while summer habitat typically includes tree species exhibiting exfoliating bark or cavities that can be used for roosting. The 8- to 10-inch diameter size classes of several species of hickory (*Carya* spp.), oak (*Quercus* spp.), ash (*Fraxinus* spp.), birch (*Betula* spp.), and elm (*Ulmus* spp.) have been found to be utilized by the Indiana bat. These tree species and many others may be used when dead, if there are adequately sized patches of loosely-adhering bark or open cavities. The structural configuration of forest stands favored for roosting includes a mixture of loose-barked trees with 60 to 80 percent canopy closure and a low density sub-canopy (less than 30 percent between about 6 feet high and the base canopy). The suitability of roosting habitat for foraging or the proximity to suitable foraging habitat is critical to the evaluation of a particular tree stand. An open subcanopy zone, under a moderately dense canopy, is important to allow maneuvering while catching insect prey. Proximity to water is critical, because insect prey density is greater over or near

open water. The Project corridor is an existing electric transmission line right-of-way and associated preliminary construction access roads.

The federal government lists the northern long-eared bat species as Threatened in Ohio. As with the Indiana bat, winter northern long-eared bat hibernacula include caves and mines, while summer habitat typically includes tree species exhibiting exfoliating bark or cavities that can be used for roosting. Northern long-eared bat has also been found, albeit rarely, roosting in structures like barns and sheds.

AEP proposes to cut identified Indiana bat habitat trees between October 1st and March 31st to minimize potential impacts to the Indiana bat and other bat species. USFWS indicated that due to the project type, size, location, and the proposed implementation of seasonal tree cutting (clearing of trees ≥ 3 inches diameter at breast height between October 1 and March 31) to avoid impacts to Indiana bats and northern long-eared bats, USFWS does not anticipate adverse effects to any federally endangered, threatened, proposed or candidate species.

4.0 FIELD SURVEY RESULTS

During the field survey on October 7, 2015, AECOM biologists identified an osprey and nest located along the existing transmission line that is being replaced. The osprey nest was located on top of an existing transmission line tower near a small lake in the vicinity of the Project. AEP is proposing a new alignment outside the existing ROW in this section to avoid impacting the osprey nest and dam associated with the lake nearby. The osprey nest is located approximately 300 feet from the new proposed alignment. The osprey is not listed as either a federal or state listed species; however, the species is protected by the Migratory Bird Treaty Act. No additional species of concern or signs of these species, and no unique habitats were observed.

5.0 SUMMARY

AEP retained AECOM to conduct a rare, threatened, and endangered species literature review for areas located within 1,000 feet of the proposed Project, a field survey within the proposed Project 200-foot survey corridor, and conduct coordination with USFWS, ONHD and ODNR. This report will be used to assist AEP's efforts to avoid impacts to rare, threatened, and endangered species potentially present in the ROW during construction activities. The field survey was conducted by AECOM field ecologists on October 7, 2015. No species of concern or signs of these species, and no unique habitats were observed. During the field survey, AECOM biologists identified an osprey and nest located approximately 300 feet from the Consol Coal-South Cadiz project.

6.0 CONCLUSION

Based upon the nature of the Project, review of available current literature, review of federal and state records of species of concern, and review of agency correspondence, it is not anticipated that federal or state species of concern will be impacted by the Project as currently planned (see below). AEP has worked to develop a construction access plan that contains the least amount of impact to sensitive

resources (wetlands, streams, etc.), as well as minimizing impacts to threatened and endangered species habitat that may be present along the alignment.

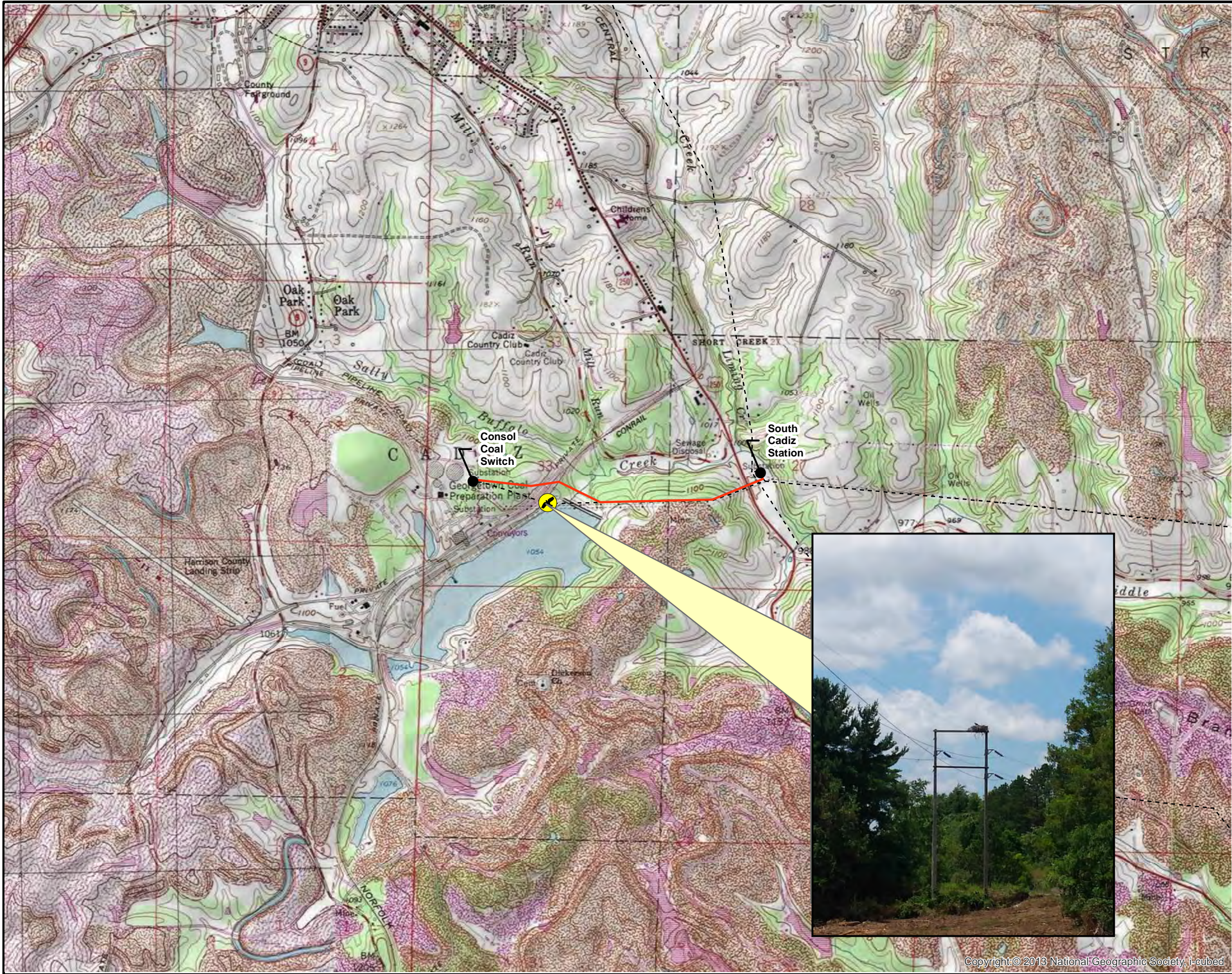
AECOM submitted a coordination letter to USFWS on July 11, 2016, soliciting comments on the Project. AECOM has not received a response regarding the Project from ODNR to date. Should additional information become available from ODNR, which differs significantly from the above listed species, an addendum report will be provided.

AEP proposes to cut identified Indiana bat habitat trees between October 1st and March 31st to minimize potential impacts to the Indiana bat and other bat species. USFWS indicated that due to the project type, size, location, and the proposed implementation of seasonal tree cutting (clearing of trees ≥ 3 inches diameter at breast height between October 1st and March 31st) to avoid impacts to Indiana bats and northern long-eared bats, USFWS does not anticipate adverse effects to any federally endangered, threatened, proposed or candidate species.

Based on recent projects within Harrison County, ODNR requested that habitat for the upland sandpiper, dry grasslands including native grasslands, seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through the Conservation Reserve Program, should not be impacted during the species' nesting period of April 15th to July 31st. AEP Ohio Transco currently intends to comply with the seasonal construction restriction for vegetation clearing and grading within the proposed right-of-way. However, if construction must occur during the nesting period, a qualified biologist will complete a presence/absence survey based on the most current ODNR protocol.

During the field survey on October 7, 2015, AECOM biologists identified an osprey and nest located along the existing transmission line that is being replaced. AEP is proposing a new alignment outside the existing ROW in this section to avoid impacting the osprey nest and dam associated with the lake nearby. The osprey is not listed as either a federal or state listed species; however, the species is protected by the Migratory Bird Treaty Act. To further avoid impacting this species, AEP will also utilized best management practices and avoid this area by using construction fencing with inclusion into the SWPPP. No additional species of concern or signs of these species, and no unique habitats were observed.

J:\Project\AEP\60445078 Freebyrd-South Cadiz\Data-Tech\GIS\Consol_coal-south_cadiz_T&E_LON_Fig1.mxd Date: 8/2/2016



- LEGEND:
- Existing Transmission Line
 - Consol Coal-South Cadiz Centerline
 - Existing Station
 - Osprey Nest on Existing Structure



0 2,000 4,000
Scale in Feet

AEP OHIO TRANSMISSION COMPANY Consol Coal-South Cadiz
138 kV Transmission Line

FIGURE 1
PROJECT OVERVIEW

Copyright © 2013 National Geographic Society, i-cubed

JOB NO. 60445078

AECOM

ATTACHMENT A

AGENCY RESPONSES



Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

Ohio Division of Wildlife
Raymond W. Petering, Chief
2045 Morse Rd., Bldg. G
Columbus, OH 43229-6693
Phone: (614) 265-6300

February 3, 2016

Beth Wilburn
AECOM
525 Vine St.
Cincinnati, OH 45239

Dear Ms. Wilburn,

After reviewing the Natural Heritage Database, I find the Division of Wildlife has no records of rare or endangered species in the Freebyrd-South Cadiz 138 kV Line project area, including a one mile radius, in Cadiz and Short Creek Townships, Harrison County, Ohio. We are unaware of any unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, nature preserves, parks or forests, national wildlife refuges, parks or forests or other protected natural areas within a one mile radius of the project area.

Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. This letter only represents a review of rare species and natural features data within the Ohio Natural Heritage Database. It does not fulfill coordination under the National Environmental Policy Act (NEPA) or the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S. C. 661 et seq.) and does 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.

Please contact me at 614-265-6818 if I can be of further assistance.

Sincerely,

A handwritten signature in blue ink that reads "Debbie Woischke".

Debbie Woischke
Ohio Natural Heritage Database Program

Geckle, Aaron

From: susan_zimmermann@fws.gov on behalf of Ohio, FW3 <ohio@fws.gov>
Sent: Thursday, July 21, 2016 12:51 PM
To: Geckle, Aaron
Subject: Freebyrd-Consolidated Coal-South Cadiz 138 kV Project, Harrison Co.



UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service
Ecological Services Office
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / Fax (614) 416-8994



TAILS# 03E15000-2016-TA-1393

Dear Mr. Geckle,

We have received your recent correspondence regarding potential impacts to federally listed species in the vicinity of the above referenced project. There are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. We recommend that proposed activities minimize water quality impacts, including fill in streams and wetlands. Best management practices should be utilized to minimize erosion and sedimentation.

FEDERALLY LISTED, PROPOSED, AND CANDIDATE SPECIES COMMENTS: Due to the project type, size, location, and the proposed implementation of seasonal tree cutting (clearing of trees ≥ 3 inches diameter at breast height between October 1 and March 31) to avoid impacts to Indiana bats and northern long-eared bats, we do not anticipate adverse effects to any 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 U.S. Fish and Wildlife Service (Service) should be initiated to assess any potential impacts.

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 Endangered Species Act (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.

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.), 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". The signature is fluid and cursive, with a large initial "D" and a long, sweeping underline.

Dan Everson

Field Office Supervisor

APPENDIX C

AREAS OF ECOLOGICAL CONCERN, WETLAND DETERMINATION, AND STREAM ASSESSMENT REPORT

Please note that this report was divided into two sections.
Freebyrd-Consol Coal and
Consol Coal-S Cadiz.

FREEBYRD-CONSOL COAL 138 KV TRANSMISSION LINE REBUILD PROJECT, HARRISON COUNTY, OHIO

AREAS OF ECOLOGICAL CONCERN, WETLAND DETERMINATION, AND STREAM ASSESSMENT REPORT

Prepared for:

American Electric Power Ohio Transmission Company
700 Morrison Road
Gahanna, Ohio 45230



Prepared by:

AECOM
525 Vine Street, Suite 1800
Cincinnati, Ohio 45202

Project #: 60445078

August 2016

TABLE OF CONTENTS

1.0	PROJECT DESCRIPTION.....	1
2.0	METHODS	1
2.1	Special Status Ecological Areas	1
2.2	Wetland Assessment	2
2.3	Stream and River Crossings	3
3.0	RESULTS.....	3
3.1	Special Status Ecological Areas	3
3.2	Wetland Assessment	3
3.3	Stream and River Crossings	4
4.0	SUMMARY	5
5.0	CONCLUSION	5
6.0	REFERENCES.....	7

TABLES

(follow text)

Number

TABLE 1	WETLANDS IDENTIFIED WITHIN THE PROJECT SURVEY CORRIDOR
TABLE 2	STREAMS IDENTIFIED WITHIN THE PROJECT SURVEY CORRIDOR

FIGURES

(follow tables)

Number

FIGURES 1 to 4	ECOLOGICAL SURVEY RESULTS
----------------	---------------------------

APPENDICES

(follow figures)

Number

ATTACHMENT A	WETLAND FORMS Attachment A.1: Ohio Rapid Assessment Method (ORAM) Forms
ATTACHMENT B	PHOTOGRAPHS Attachment B.1: Representative Wetland Photographs Attachment B.2: Representative Stream Photographs

1.0 PROJECT DESCRIPTION

This document presents the results of the wetland and stream assessment conducted by AECOM for American Electric Power Ohio Transmission Company's (AEP Ohio Transco) proposed Freebyrd-Consol Coal 138 kV Transmission Line Rebuild Project (Project). AEP Ohio Transco is proposing to rebuild approximately 2.5 miles of the existing Freebyrd-Consol Coal 138 kV transmission line in Harrison County, Ohio within the currently existing right-of-way (ROW) corridor.

As part of the Ohio Power Siting Board (OPSB) Letter of Notification (LON) requirements, AEP Ohio Transco is required to describe the investigation concerning the presence or absence of areas of ecological concern as stated in Ohio Administrative Code (OAC) Rule 4906-6-05(B)(10)(f). This rule states:

(10) The applicant shall describe the social and ecological impacts of the project.

(f) Provide a description of the applicant's investigation concerning the presence or absence of areas of ecological concern (including national and state forests and parks, floodplains, wetlands, designated or proposed wilderness areas, national and state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, and wildlife sanctuaries) that may be located within the potential disturbance area of the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

AEP Ohio Transco retained AECOM to review areas of ecological concern, as defined above, within the proposed Project vicinity and conduct a field survey of waters of the U.S. within the limits of the existing and proposed transmission line right-of-way and associated proposed construction access roads. This report will be used to assist AEP Ohio Transco's efforts to avoid impacts to areas of ecological concern present in the survey area during construction.

2.0 METHODS

2.1 Special Status Ecological Areas

AECOM reviewed maps and Geographical Information System (GIS) data in order to identify national and state forests and parks, designated or proposed wilderness areas, national and state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, and wildlife sanctuaries in the Project vicinity. GIS data sources included the Ohio Department of Natural Resources (ODNR) Ohio Natural Heritage Database and federal land and parks layers available from Environmental Systems Research Institute (ESRI). Property ownership within 1,000 feet of the Project was reviewed to identify parcels that may have special status. AECOM also noted land use during the field reconnaissance conducted during October 2015 and July 2016.

Floodplains were evaluated based on the Federal Emergency Management Agency's (FEMA) Flood Map Viewer (<https://hazards.fema.gov/wps/portal/mapviewer>).

2.2 Wetland Assessment

National Wetland Inventory (NWI) wetlands are areas of potential wetland that have been identified from U.S. Fish and Wildlife Service (USFWS) aerial photo-interpretation and 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. In addition, many NWI-mapped wetlands are not found during field surveys. 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.

As requested by AEP, AECOM restricted the wetland assessments to: 1) identifying wetlands to their appropriate Cowardin classification (Cowardin, et al., 1979) and identification of boundaries, and 2) conducting wetland evaluations using the Ohio Rapid Assessment Method (ORAM) protocol. The Project area was reviewed for the presence of wetlands using the procedures outlined in the United States Army Corps of Engineers (USACE) Wetlands Delineation Manual (1987 Manual) (Environmental Laboratory, 1987) in conjunction with the procedures outlined in the USACE Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Regional Supplement) (2012). Since the Project survey only included a wetland determination, AECOM did not conduct detailed examinations of the three wetland parameters that are documented in USACE Regional Supplement data sheets. However, enough information was gathered to make the onsite determination whether a wetland was present or not based on a three-factor approach involving indicators of hydrophytic vegetation, hydric soil, and wetland hydrology and to identify the approximate boundaries.

An AECOM biologist evaluated wetlands through a pedestrian site reconnaissance of the survey area, including identifying the vegetation communities, soils identification where necessary, conducting a geomorphologic assessment of hydrology, and notation of disturbance. Determined wetland boundaries were noted where one or more of these criteria gave way to upland characteristics. The determined wetland boundaries were recorded with a handheld Trimble GeoXH Global Positioning System (GPS) unit where the proposed Project enters and exits a wetland.

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 become invalidated, wholly or in part, by changes beyond the control of AECOM.

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).

Ohio Rapid Assessment Method v. 5.0: The Ohio Environmental Protection Agency's (Ohio EPA) Ohio Rapid Assessment Method (ORAM) for Wetlands Version 5.0 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 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 Ohio EPA, 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). The ORAM score for the wetlands that were delineated are discussed in Section 3.2 of this report.

2.3 Stream and River Crossings

Regulatory activities under the Clean Water Act (CWA) 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 CWA 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). Similar to the wetland assessments, AECOM stream assessments were limited to GPS recording of channels and basic classification based on flow regime (perennial, intermittent, or ephemeral).

3.0 RESULTS

3.1 Special Status Ecological Areas

AECOM conducted a review of published resources and consulted with agencies to identify national or state forests and parks designated or proposed wilderness areas, national and state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, wildlife sanctuaries and floodplains crossed by and in the immediate vicinity of the Project. No sites were identified within one mile of the Project.

According to the FEMA National Flood Hazard Layer (NFHL) (GIS shapefile), the entire Project is located within Flood Zone X, an area with minimal flood hazard. No changes in flood elevations are anticipated as a result of the Project.

3.2 Wetland Assessment

National Wetland Inventory Map Review: According to the NWI map of the Jewett, Flushing, and Harrisville, Ohio quadrangles, there are no mapped NWI wetlands located within the Project survey corridor.

Wetland Delineation: Seven wetlands, totaling 1.38 acres, were delineated within the Project survey corridor as shown in Table 1. Some wetland boundaries extend beyond the 200 foot wide Project survey corridor, but only portions of those wetlands identified within the study corridor were assessed. Additionally, AECOM commonly splits wetlands where there is an obvious break between Cowardin wetland types. This split results in each wetland section being assessed independently; however, AECOM recognizes that split wetland sections are a component of a larger wetland complex.

TABLE 1
WETLANDS IDENTIFIED WITHIN THE PROJECT SURVEY CORRIDOR

Report Name	Latitude	Longitude	Cowardin Wetland Type	ORAM Score	ORAM Category	Acreage within Survey Corridor
Wetland 1	40.241349	-80.993520	PEM	21.0	Category 1	0.001
Wetland 2	40.244995	-81.008799	PEM	22.0	Category 1	0.25
Wetland 3	40.240997	-80.995280	PEM	19.5	Category 1	0.42
Wetland 4a	40.242449	-80.989295	PEM	16.5	Category 1	0.33
Wetland 4b	40.245209	-81.009711	PEM	15.5	Category 1	0.12
Wetland 5	40.241474	-80.992886	PEM	15.5	Category 1	0.22
Wetland 6	40.242075	-80.990356	PEM	14.5	Category 1	0.04
Total: 7 wetlands						1.38

The seven wetlands identified within the Project survey corridor are all palustrine emergent wetland (PEM) habitat types.

ORAM scores for these wetlands ranged from 14.5 to 22. All seven of the assessed wetlands were identified as Category 1 wetlands. No Category 2 or 3 wetlands were identified in the Project survey corridor.

The location and approximate extents of the wetlands, as delineated within the Project survey area are shown on Figures 1 through 4. Representative color photographs taken of the wetlands are provided in Attachment B. Completed ORAM forms are provided in Attachment A.

3.3 Stream and River Crossings

AECOM identified three streams, totaling 381 linear feet, within the 200-foot wide Project survey corridor (Table 2). One intermittent stream totaling 209 linear feet and two ephemeral streams totaling 172 linear feet were observed.

TABLE 2
STREAMS IDENTIFIED WITHIN THE PROJECT SURVEY CORRIDOR

Report Name	Latitude	Longitude	Flow Regime	Max Pool Depth (inches)	Bankfull Width (feet)	Length within Survey Corridor (feet)
Stream 01	40.244539	-81.003653	Ephemeral	0	1	41
Stream 02	40.241665	-80.997444	Ephemeral	0	2	131
Stream 03	40.241032	-80.995255	Intermittent	3	3	209
Total: 3 Streams						381

AECOM has preliminarily determined that all assessed streams within the 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.).

3.4 Ponds

One 0.19 acre pond was identified within the 200-foot wide Project survey corridor. This pond appeared to be man-made for recreational, wildlife, and/or livestock use. The location and approximate extent of the pond identified within the Project survey corridor is shown on Figure 2.

4.0 SUMMARY

No federal, state, or locally-operated natural areas were identified within a mile of the Project. The entire Project is located within FEMA Flood Zone X, an area with minimal flood hazard. No changes in flood elevation are anticipated as a result of the Project.

Seven wetlands, totaling 1.38 acres, were identified within the Project survey corridor. All of these wetlands were classified as PEM Category 1 wetlands. Three streams were identified within the Project survey corridor, totaling 381 linear feet. One stream was classified as intermittent and the remaining two were ephemeral. One pond was also identified within the Project survey corridor.

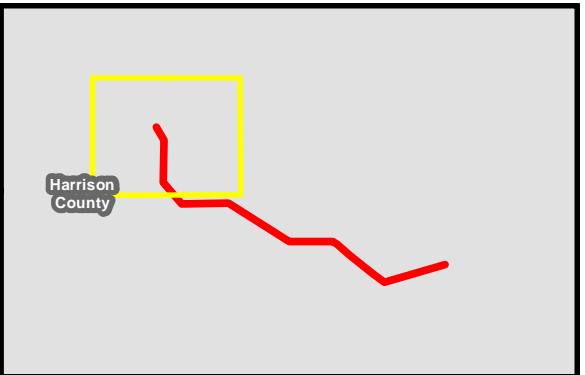
5.0 CONCLUSION

This report will be used to assist AEP Ohio Transco's efforts to avoid special status ecological areas, wetlands, and streams to the extent possible during construction of the Project, thereby minimizing impacts to these features identified within the Project area. Due to the planned use of timber matting for access roads and work pads while working in wetlands and streams, no permanent impacts are anticipated. Erosion control methods including silt fencing are expected to be used where appropriate to minimize runoff-related impacts to stream channels and wetlands. As a result, significant impacts to waters of the U.S. are not anticipated.

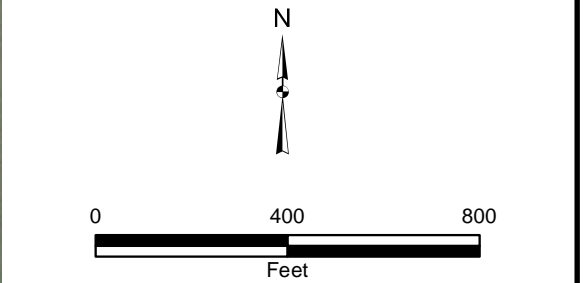
The field survey results presented herein apply to the existing and reasonably foreseeable site conditions at the time of our assessment. They cannot apply to site changes of which AECOM is unaware and has not had the opportunity to review. Changes in the condition of a property may occur with time due 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 become invalidated, wholly or in part, by changes beyond the control of AECOM.

6.0 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.
- 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.
- 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.
- U.S. Army Corps of Engineers. 2012. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont (Version 2.0)*, ed. J. S. Wakeley, R. W. Lichvar, C. V. Noble, and J.F. Berkowitz. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- U.S. Fish and Wildlife Service. 2015. National Wetlands Inventory Branch of Resource and Mapping Service. <http://www.fws.gov/wetlands/data/mapper.HTML>



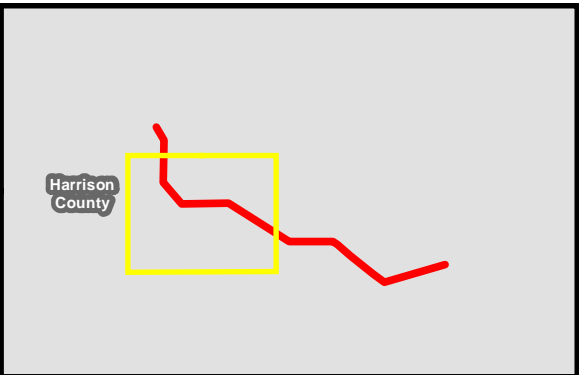
- LEGEND:**
- Freebyrd-Consol Coal 138 kV Transmission Line Rebuild
 - Preliminary Proposed Structure Location
 - NWI Wetland
 - 200-foot Survey Corridor



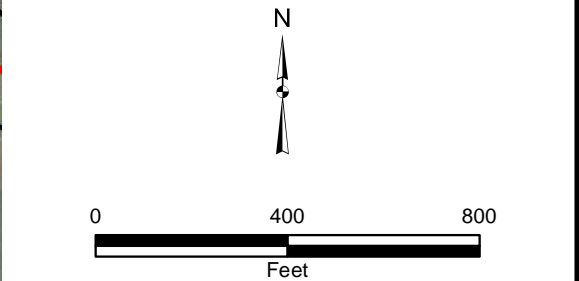
Service Layer Credits: Image courtesy of
USGS Earthstar Geographics SIO © 2016
Microsoft Corporation © 2010 NAVTEQ ©
AND

AEP OHIO TRANSMISSION COMPANY Freebyrd-Consol Coal
138 kV Line

FIGURE 1
ECOLOGICAL SURVEY RESULTS



- LEGEND:
- Freebyrd-Consol Coal 138 kV Transmission Line Rebuild
 - Preliminary Proposed Structure Location
 - NWI Wetland
 - 200-foot Survey Corridor
 - Delineated Pond



Service Layer Credits: Image courtesy of
USGS Earthstar Geographics SIO © 2016
Microsoft Corporation © 2010 NAVTEQ ©
AND

AEP OHIO TRANSMISSION COMPANY Freebyrd-Consol Coal
138 kV Line

FIGURE 2
ECOLOGICAL SURVEY RESULTS



Harrison County

LEGEND:

- Freebyrd-Consol Coal 138 kV Transmission Line Rebuild
- Preliminary Proposed Structure Location
- NWI Wetland
- 200-foot Survey Corridor
- Delineated Stream**
 - Delineated Ephemeral Stream
 - Delineated Wetland
 - Delineated Pond

N

0 400 800 Feet

Service Layer Credits: Image courtesy of USGS Earthstar Geographics SIO © 2016 Microsoft Corporation © 2010 NAVTEQ © AND

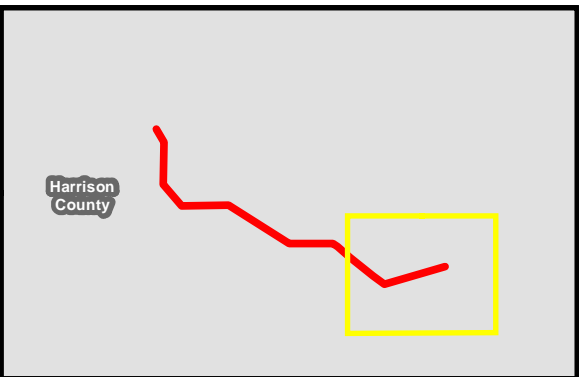
AEP OHIO TRANSMISSION COMPANY

Freebyrd-Consol Coal 138 kV Line

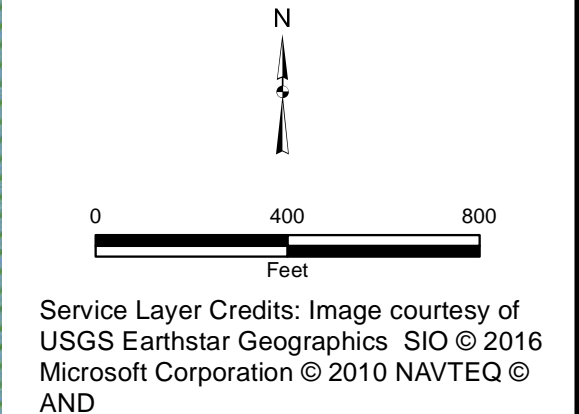
FIGURE 3
ECOLOGICAL SURVEY RESULTS

JOB NO. 60445078

AECOM



- LEGEND:**
- Freebyrd-Consol Coal 138 kV Transmission Line Rebuild
 - Preliminary Proposed Structure Location
 - NWI Wetland
 - 200-foot Survey Corridor
 - Delineated Stream**
 - Delineated Ephemeral Stream
 - Delineated Intermittent Stream
 - Delineated Wetland



AEP OHIO TRANSMISSION COMPANY Freebyrd-Consol Coal 138 kV Line

FIGURE 4
ECOLOGICAL SURVEY RESULTS

ATTACHMENT A

WETLAND FORMS

ATTACHMENT A.1

OHIO RAPID ASSESSMENT METHOD (ORAM) FORMS

Site: Freebyrd-South Cadiz	Rater(s): BAO, BAE	Date: 10/7/2015
----------------------------	--------------------	-----------------

1	1
----------	----------

max 6 pts

subtotal

Metric 1. Wetland Area (size).**w-bao-100715-01****Select one size class and assign score.**

- ☐ >50 acres (>20.2ha) (6 pts)
☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
☐ <0.1 acres (0.04ha) (0 pts)

0.1	acres
-----	-------

6	7
----------	----------

max 14 pts.

subtotal

Metric 2. Upland buffers and surrounding land use.**2a. Calculate average buffer width. Select only one and assign score. Do not double check.**

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
☒ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

8.0	15
------------	-----------

max 30 pts.

subtotal

Metric 3. Hydrology.**3a. Sources of Water. Score all that apply.**

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

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
☒ <0.4m (<15.7in) (1)

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

- ☐ None or none apparent (12)
☐ Recovered (7)
☒ Recovering (3)
☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> ditch
<input type="checkbox"/> tile
<input type="checkbox"/> dike
<input type="checkbox"/> weir
<input type="checkbox"/> stormwater input | <input type="checkbox"/> point source (nonstormwater)
<input checked="" type="checkbox"/> filling/grading
<input type="checkbox"/> road bed/RR track
<input type="checkbox"/> dredging
<input checked="" type="checkbox"/> Other: former mining |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

3	18
----------	-----------

max 20 pts.

subtotal

Metric 4. Habitat Alteration and Development.**4a. Substrate disturbance. Score one or double check and average.**

- ☐ None or none apparent (4)
☐ Recovered (3)
☐ Recovering (2)
☒ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
☐ Very good (6)
☐ Good (5)
☐ Moderately good (4)
☐ Fair (3)
☐ Poor to fair (2)
☒ Poor (1)

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

- ☐ None or none apparent (9)
☐ Recovered (6)
☐ Recovering (3)
☒ Recent or no recovery (1)

Check all disturbances observed

- | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> mowing
<input checked="" type="checkbox"/> grazing
<input checked="" type="checkbox"/> clearcutting
<input checked="" type="checkbox"/> selective cutting
<input type="checkbox"/> woody debris removal
<input type="checkbox"/> toxic pollutants | <input type="checkbox"/> shrub/sapling removal
<input type="checkbox"/> herbaceous/aquatic bed removal
<input type="checkbox"/> sedimentation
<input type="checkbox"/> dredging
<input type="checkbox"/> farming
<input type="checkbox"/> nutrient enrichment |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

18

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating

Site: Freebyrd-South Cadiz

Rater(s): BAO, BAE

Date:

10/7/2015

18

w-bao-100715-01

subtotal this page

0

18

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
☐ Fen (10)
☐ Old growth forest (10)
☐ Mature forested wetland (5)
☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
☐ Lake Plain Sand Prairies (Oak Openings) (10)
☐ Relict Wet Prairies (10)
☐ Known occurrence state/federal threatened or endangered species (10)
☐ Significant migratory songbird/water fowl habitat or usage (10)
☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

3

21

max 20pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.**6a. Wetland Vegetation Communities.**

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
☒ 1 Emergent
☐ Shrub
☐ Forest
☐ Mudflats
☐ Open water
☐ Other _____

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
☐ Moderately high(4)
☐ Moderate (3)
☐ Moderately low (2)
☐ Low (1)
☒ x None (0)

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
☐ Moderate 25-75% cover (-3)
☐ Sparse 5-25% cover (-1)
☐ Nearly absent <5% cover (0)
☒ x Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- Vegetated hummocks/tussucks
 Coarse woody debris >15cm (6in)
 Standing dead >25cm (10in) dbh
 1 Amphibian breeding pools

Vegetation Community Cover Scale

- | | |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 0 | Absent or comprises <0.1ha (0.2471 acres) contiguous area |
| 1 | Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality |
| 2 | Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality |
| 3 | Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality |

Narrative Description of Vegetation Quality

- | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species |
| Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to |
| A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp |

Mudflat and Open Water Class Quality

- | | |
|---|-----------------------------------------|
| 0 | Absent <0.1ha (0.247 acres) |
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres) |
| 2 | Moderate 1 to <4ha (2.47 to 9.88 acres) |
| 3 | High 4ha (9.88 acres) or more |

Microtopography Cover Scale

- | | |
|---|------------------------------------------------------------------------------------------------|
| 0 | Absent |
| 1 | Present very small amounts or if more common of marginal quality |
| 2 | Present in moderate amounts, but not of highest quality or in small amounts of highest quality |
| 3 | Present in moderate or greater amounts and of highest quality |

21 GRAND TOTAL(max 100 pts)

Site: Freebyrd-South Cadiz

Rater(s): BAO, BAE

Date:

10/7/2015

1 1

max 6 pts

subtotal

Metric 1. Wetland Area (size).

w-bao-100715-02

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
☐ <0.1 acres (0.04ha) (0 pts)

0.26 acres

6 7

max 14 pts.

subtotal

Metric 2. Upland buffers and surrounding land use.**2a. Calculate average buffer width. Select only one and assign score. Do not double check.**

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
☒ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

8.0 15

max 30 pts.

subtotal

Metric 3. Hydrology.**3a. Sources of Water. Score all that apply.**

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

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
☒ <0.4m (<15.7in) (1)

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

- ☐ None or none apparent (12)
☐ Recovered (7)
☒ Recovering (3)
☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- | | |
|-------------------------------------------|----------------------------------------------------------|
| <input checked="" type="checkbox"/> ditch | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile | <input checked="" type="checkbox"/> filling/grading |
| <input type="checkbox"/> dike | <input type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir | <input type="checkbox"/> dredging |
| <input type="checkbox"/> stormwater input | <input checked="" type="checkbox"/> Other: former mining |

4 19

max 20 pts.

subtotal

Metric 4. Habitat Alteration and Development.**4a. Substrate disturbance. Score one or double check and average.**

- ☐ None or none apparent (4)
☐ Recovered (3)
☐ Recovering (2)
☒ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
☐ Very good (6)
☐ Good (5)
☐ Moderately good (4)
☐ Fair (3)
☒ Poor to fair (2)
☐ Poor (1)

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

- ☐ None or none apparent (9)
☐ Recovered (6)
☐ Recovering (3)
☒ Recent or no recovery (1)

Check all disturbances observed

- | | |
|--------------------------------------------------|---------------------------------------------------------|
| <input checked="" type="checkbox"/> mowing | <input type="checkbox"/> shrub/sapling removal |
| <input checked="" type="checkbox"/> grazing | <input type="checkbox"/> herbaceous/aquatic bed removal |
| <input checked="" type="checkbox"/> clearcutting | <input type="checkbox"/> sedimentation |
| <input type="checkbox"/> selective cutting | <input type="checkbox"/> dredging |
| <input type="checkbox"/> woody debris removal | <input type="checkbox"/> farming |
| <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> nutrient enrichment |

19

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating

Site: Freebyrd-South Cadiz

Rater(s): BAO, BAE

Date:

10/7/2015

19

w-bao-100715-02

subtotal this page

0

19

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
☐ Fen (10)
☐ Old growth forest (10)
☐ Mature forested wetland (5)
☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
☐ Lake Plain Sand Prairies (Oak Openings) (10)
☐ Relict Wet Prairies (10)
☐ Known occurrence state/federal threatened or endangered species (10)
☐ Significant migratory songbird/water fowl habitat or usage (10)
☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

3

22

max 20pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.**6a. Wetland Vegetation Communities.**

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
☒ 1 Emergent
☐ Shrub
☐ Forest
☐ Mudflats
☐ Open water
☐ Other _____

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
☐ Moderately high(4)
☐ Moderate (3)
☐ Moderately low (2)
☐ Low (1)
☒ x None (0)

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
☐ Moderate 25-75% cover (-3)
☐ Sparse 5-25% cover (-1)
☐ Nearly absent <5% cover (0)
☒ x Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- Vegetated hummocks/tussucks
 Coarse woody debris >15cm (6in)
 Standing dead >25cm (10in) dbh
 1 Amphibian breeding pools

Vegetation Community Cover Scale

- | | |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 0 | Absent or comprises <0.1ha (0.2471 acres) contiguous area |
| 1 | Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality |
| 2 | Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality |
| 3 | Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality |

Narrative Description of Vegetation Quality

- | | |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0 | Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species |
| 1 | Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to |
| 2 | A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp |

Mudflat and Open Water Class Quality

- | | |
|---|-----------------------------------------|
| 0 | Absent <0.1ha (0.247 acres) |
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres) |
| 2 | Moderate 1 to <4ha (2.47 to 9.88 acres) |
| 3 | High 4ha (9.88 acres) or more |

Microtopography Cover Scale

- | | |
|---|------------------------------------------------------------------------------------------------|
| 0 | Absent |
| 1 | Present very small amounts or if more common of marginal quality |
| 2 | Present in moderate amounts, but not of highest quality or in small amounts of highest quality |
| 3 | Present in moderate or greater amounts and of highest quality |

22 GRAND TOTAL(max 100 pts)

Site: Freebyrd-Cadiz

Rater(s): BAO, BAE

Date:

10/7/2015

2 2

max 6 pts

subtotal

Metric 1. Wetland Area (size).**w-bao-100715-03****Select one size class and assign score.**

- ☐ >50 acres (>20.2ha) (6 pts)
☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
☐ <0.1 acres (0.04ha) (0 pts)

0.48 acres

6 8

max 14 pts.

subtotal

Metric 2. Upland buffers and surrounding land use.**2a. Calculate average buffer width. Select only one and assign score. Do not double check.**

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
☒ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

10.0 18.0

max 30 pts.

subtotal

Metric 3. Hydrology.**3a. Sources of Water. Score all that apply.**

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

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
☒ <0.4m (<15.7in) (1)

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

- ☐ None or none apparent (12)
☐ Recovered (7)
☒ Recovering (3)
☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- | | |
|-------------------------------------------|----------------------------------------------------------|
| <input type="checkbox"/> ditch | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile | <input type="checkbox"/> filling/grading |
| <input type="checkbox"/> dike | <input type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir | <input type="checkbox"/> dredging |
| <input type="checkbox"/> stormwater input | <input checked="" type="checkbox"/> Other: former mining |

5.5 23.5

max 20 pts.

subtotal

Metric 4. Habitat Alteration and Development.**4a. Substrate disturbance. Score one or double check and average.**

- ☐ None or none apparent (4)
☐ Recovered (3)
☒ Recovering (2)
☒ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
☐ Very good (6)
☐ Good (5)
☐ Moderately good (4)
☐ Fair (3)
☐ Poor to fair (2)
☒ Poor (1)

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

- ☐ None or none apparent (9)
☐ Recovered (6)
☒ Recovering (3)
☐ Recent or no recovery (1)

Check all disturbances observed

- | | |
|-------------------------------------------------------|---------------------------------------------------------|
| <input checked="" type="checkbox"/> mowing | <input type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing | <input type="checkbox"/> herbaceous/aquatic bed removal |
| <input checked="" type="checkbox"/> clearcutting | <input type="checkbox"/> sedimentation |
| <input checked="" type="checkbox"/> selective cutting | <input type="checkbox"/> dredging |
| <input type="checkbox"/> woody debris removal | <input type="checkbox"/> farming |
| <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> nutrient enrichment |

23.5

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating

Site: Freebyrd-Cadiz

Rater(s): BAO, BAE

Date:

10/7/2015

23.5

w-bao-100715-03

subtotal this page

0 23.5

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
☐ Fen (10)
☐ Old growth forest (10)
☐ Mature forested wetland (5)
☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
☐ Lake Plain Sand Prairies (Oak Openings) (10)
☐ Relict Wet Prairies (10)
☐ Known occurrence state/federal threatened or endangered species (10)
☐ Significant migratory songbird/water fowl habitat or usage (10)
☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

-4 19.5

max 20pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.**6a. Wetland Vegetation Communities.**

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
☒ 1 Emergent
☐ Shrub
☐ Forest
☐ Mudflats
☐ Open water
☐ Other _____

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
☐ Moderately high(4)
☐ Moderate (3)
☐ Moderately low (2)
☐ Low (1)
☒ x None (0)

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- ☒ x Extensive >75% cover (-5)
☐ Moderate 25-75% cover (-3)
☐ Sparse 5-25% cover (-1)
☐ Nearly absent <5% cover (0)
☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussucks
☐ Coarse woody debris >15cm (6in)
☐ Standing dead >25cm (10in) dbh
☐ Amphibian breeding pools

Vegetation Community Cover Scale

- | | |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 0 | Absent or comprises <0.1ha (0.2471 acres) contiguous area |
| 1 | Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality |
| 2 | Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality |
| 3 | Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality |

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

- | | |
|---|-----------------------------------------|
| 0 | Absent <0.1ha (0.247 acres) |
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres) |
| 2 | Moderate 1 to <4ha (2.47 to 9.88 acres) |
| 3 | High 4ha (9.88 acres) or more |

Microtopography Cover Scale

- | | |
|---|------------------------------------------------------------------------------------------------|
| 0 | Absent |
| 1 | Present very small amounts or if more common of marginal quality |
| 2 | Present in moderate amounts, but not of highest quality or in small amounts of highest quality |
| 3 | Present in moderate or greater amounts and of highest quality |

19.5 GRAND TOTAL(max 100 pts)

Site: Freebyrd-Cadiz

Rater(s): BAO, BAE

Date:

10/7/2015

2 2

max 6 pts

subtotal

Metric 1. Wetland Area (size).**w-bao-100715-04a****Select one size class and assign score.**

- ☐ >50 acres (>20.2ha) (6 pts)
☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
☐ <0.1 acres (0.04ha) (0 pts)

0.33 acres

6 8

max 14 pts.

subtotal

Metric 2. Upland buffers and surrounding land use.**2a. Calculate average buffer width. Select only one and assign score. Do not double check.**

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
☒ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

7.0 15.0

max 30 pts.

subtotal

Metric 3. Hydrology.**3a. Sources of Water. Score all that apply.**

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

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
☒ <0.4m (<15.7in) (1)

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

- ☐ None or none apparent (12)
☐ Recovered (7)
☒ Recovering (3)
☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- | | |
|-------------------------------------------|-------------------------------------------------------|
| <input type="checkbox"/> ditch | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile | <input checked="" type="checkbox"/> filling/grading |
| <input type="checkbox"/> dike | <input type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir | <input type="checkbox"/> dredging |
| <input type="checkbox"/> stormwater input | <input type="checkbox"/> Other: |

5.5 20.5

max 20 pts.

subtotal

Metric 4. Habitat Alteration and Development.**4a. Substrate disturbance. Score one or double check and average.**

- ☐ None or none apparent (4)
☐ Recovered (3)
☒ Recovering (2)
☒ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
☐ Very good (6)
☐ Good (5)
☐ Moderately good (4)
☐ Fair (3)
☒ Poor to fair (2)
☐ Poor (1)

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

- ☐ None or none apparent (9)
☐ Recovered (6)
☒ Recovering (3)
☒ Recent or no recovery (1)

Check all disturbances observed

- | | |
|-------------------------------------------------------|---------------------------------------------------------|
| <input checked="" type="checkbox"/> mowing | <input type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing | <input type="checkbox"/> herbaceous/aquatic bed removal |
| <input checked="" type="checkbox"/> clearcutting | <input type="checkbox"/> sedimentation |
| <input checked="" type="checkbox"/> selective cutting | <input type="checkbox"/> dredging |
| <input type="checkbox"/> woody debris removal | <input type="checkbox"/> farming |
| <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> nutrient enrichment |

20.5

subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: Freebyrd-Cadiz

Rater(s): BAO, BAE

Date:

10/7/2015

20.5

w-bao-100715-04a

subtotal this page

0 20.5

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
☐ Fen (10)
☐ Old growth forest (10)
☐ Mature forested wetland (5)
☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
☐ Lake Plain Sand Prairies (Oak Openings) (10)
☐ Relict Wet Prairies (10)
☐ Known occurrence state/federal threatened or endangered species (10)
☐ Significant migratory songbird/water fowl habitat or usage (10)
☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

-4 16.5

max 20pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.**6a. Wetland Vegetation Communities.**

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
☒ 1 Emergent
☐ Shrub
☐ Forest
☐ Mudflats
☐ Open water
☐ Other _____

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
☐ Moderately high(4)
☐ Moderate (3)
☐ Moderately low (2)
☐ Low (1)
☒ x None (0)

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- ☒ x Extensive >75% cover (-5)
☐ Moderate 25-75% cover (-3)
☐ Sparse 5-25% cover (-1)
☐ Nearly absent <5% cover (0)
☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussucks
☐ Coarse woody debris >15cm (6in)
☐ Standing dead >25cm (10in) dbh
☐ Amphibian breeding pools

Vegetation Community Cover Scale

- | | |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 0 | Absent or comprises <0.1ha (0.2471 acres) contiguous area |
| 1 | Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality |
| 2 | Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality |
| 3 | Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality |

Narrative Description of Vegetation Quality

- | | |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0 | Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species |
| 1 | Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to |
| 2 | A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp |

Mudflat and Open Water Class Quality

- | | |
|---|-----------------------------------------|
| 0 | Absent <0.1ha (0.247 acres) |
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres) |
| 2 | Moderate 1 to <4ha (2.47 to 9.88 acres) |
| 3 | High 4ha (9.88 acres) or more |

Microtopography Cover Scale

- | | |
|---|------------------------------------------------------------------------------------------------|
| 0 | Absent |
| 1 | Present very small amounts or if more common of marginal quality |
| 2 | Present in moderate amounts, but not of highest quality or in small amounts of highest quality |
| 3 | Present in moderate or greater amounts and of highest quality |

16.5 GRAND TOTAL(max 100 pts)

Site: Freebyrd-Cadiz

Rater(s): BAO, BAE

Date:

10/7/2015

1 1

max 6 pts

subtotal

Metric 1. Wetland Area (size).

w-bao-100715-04b,05

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
☐ <0.1 acres (0.04ha) (0 pts)

 acres

6 7

max 14 pts.

subtotal

Metric 2. Upland buffers and surrounding land use.**2a. Calculate average buffer width. Select only one and assign score. Do not double check.**

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
☒ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

7.0 14.0

max 30 pts.

subtotal

Metric 3. Hydrology.**3a. Sources of Water. Score all that apply.**

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

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
☒ <0.4m (<15.7in) (1)

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

- ☐ None or none apparent (12)
☐ Recovered (7)
☒ Recovering (3)
☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- | | |
|-------------------------------------------|-------------------------------------------------------|
| <input type="checkbox"/> ditch | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile | <input checked="" type="checkbox"/> filling/grading |
| <input type="checkbox"/> dike | <input type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir | <input type="checkbox"/> dredging |
| <input type="checkbox"/> stormwater input | <input type="checkbox"/> Other: |

5.5 19.5

max 20 pts.

subtotal

Metric 4. Habitat Alteration and Development.**4a. Substrate disturbance. Score one or double check and average.**

- ☐ None or none apparent (4)
☐ Recovered (3)
☒ Recovering (2)
☒ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
☐ Very good (6)
☐ Good (5)
☐ Moderately good (4)
☐ Fair (3)
☒ Poor to fair (2)
☐ Poor (1)

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

- ☐ None or none apparent (9)
☐ Recovered (6)
☒ Recovering (3)
☒ Recent or no recovery (1)

Check all disturbances observed

- | | |
|-------------------------------------------------------|---------------------------------------------------------|
| <input checked="" type="checkbox"/> mowing | <input type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing | <input type="checkbox"/> herbaceous/aquatic bed removal |
| <input checked="" type="checkbox"/> clearcutting | <input type="checkbox"/> sedimentation |
| <input checked="" type="checkbox"/> selective cutting | <input type="checkbox"/> dredging |
| <input type="checkbox"/> woody debris removal | <input type="checkbox"/> farming |
| <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> nutrient enrichment |

19.5

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating

Site: Freebyrd-Cadiz

Rater(s): BAO, BAE

Date:

10/7/2015

19.5

w-bao-100715-04b,05

subtotal this page

0 19.5

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
☐ Fen (10)
☐ Old growth forest (10)
☐ Mature forested wetland (5)
☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
☐ Lake Plain Sand Prairies (Oak Openings) (10)
☐ Relict Wet Prairies (10)
☐ Known occurrence state/federal threatened or endangered species (10)
☐ Significant migratory songbird/water fowl habitat or usage (10)
☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

-4 15.5

max 20pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.**6a. Wetland Vegetation Communities.**

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
☒ 1 Emergent
☐ Shrub
☐ Forest
☐ Mudflats
☐ Open water
☐ Other _____

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
☐ Moderately high(4)
☐ Moderate (3)
☐ Moderately low (2)
☐ Low (1)
☒ x None (0)

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- ☒ x Extensive >75% cover (-5)
☐ Moderate 25-75% cover (-3)
☐ Sparse 5-25% cover (-1)
☐ Nearly absent <5% cover (0)
☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussucks
☐ Coarse woody debris >15cm (6in)
☐ Standing dead >25cm (10in) dbh
☐ Amphibian breeding pools

Vegetation Community Cover Scale

- | | |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 0 | Absent or comprises <0.1ha (0.2471 acres) contiguous area |
| 1 | Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality |
| 2 | Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality |
| 3 | Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality |

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

- | | |
|---|-----------------------------------------|
| 0 | Absent <0.1ha (0.247 acres) |
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres) |
| 2 | Moderate 1 to <4ha (2.47 to 9.88 acres) |
| 3 | High 4ha (9.88 acres) or more |

Microtopography Cover Scale

- | | |
|---|------------------------------------------------------------------------------------------------|
| 0 | Absent |
| 1 | Present very small amounts or if more common of marginal quality |
| 2 | Present in moderate amounts, but not of highest quality or in small amounts of highest quality |
| 3 | Present in moderate or greater amounts and of highest quality |

15.5 GRAND TOTAL(max 100 pts)

Site: Freebyrd-Cadiz

Rater(s): BAO, BAE

Date:

10/7/2015

0 0

max 6 pts

subtotal

Metric 1. Wetland Area (size).

w-bao-100715-06,07a,07b,08,09,10

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
☒ <0.1 acres (0.04ha) (0 pts)

_____ acres

6 6

max 14 pts.

subtotal

Metric 2. Upland buffers and surrounding land use.**2a. Calculate average buffer width. Select only one and assign score. Do not double check.**

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
☒ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

7.0 13.0

max 30 pts.

subtotal

Metric 3. Hydrology.**3a. Sources of Water. Score all that apply.**

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

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
☒ <0.4m (<15.7in) (1)

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

- ☐ None or none apparent (12)
☐ Recovered (7)
☒ Recovering (3)
☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- | | |
|-------------------------------------------|-------------------------------------------------------|
| <input type="checkbox"/> ditch | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile | <input checked="" type="checkbox"/> filling/grading |
| <input type="checkbox"/> dike | <input type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir | <input type="checkbox"/> dredging |
| <input type="checkbox"/> stormwater input | <input type="checkbox"/> Other: |

5.5 18.5

max 20 pts.

subtotal

Metric 4. Habitat Alteration and Development.**4a. Substrate disturbance. Score one or double check and average.**

- ☐ None or none apparent (4)
☐ Recovered (3)
☒ Recovering (2)
☒ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
☐ Very good (6)
☐ Good (5)
☐ Moderately good (4)
☐ Fair (3)
☒ Poor to fair (2)
☐ Poor (1)

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

- ☐ None or none apparent (9)
☐ Recovered (6)
☒ Recovering (3)
☒ Recent or no recovery (1)

Check all disturbances observed

- | | |
|-------------------------------------------------------|---------------------------------------------------------|
| <input checked="" type="checkbox"/> mowing | <input type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing | <input type="checkbox"/> herbaceous/aquatic bed removal |
| <input checked="" type="checkbox"/> clearcutting | <input type="checkbox"/> sedimentation |
| <input checked="" type="checkbox"/> selective cutting | <input type="checkbox"/> dredging |
| <input type="checkbox"/> woody debris removal | <input type="checkbox"/> farming |
| <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> nutrient enrichment |

18.5

subtotal this page ORAM v. 5.0 Field Form Quantitative Rating

Site: Freebyrd-Cadiz

Rater(s): BAO, BAE

Date:

10/7/2015

18.5

w-bao-100715-06,07a,07b,08,09,10

subtotal this page

0 18.5

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
☐ Fen (10)
☐ Old growth forest (10)
☐ Mature forested wetland (5)
☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
☐ Lake Plain Sand Prairies (Oak Openings) (10)
☐ Relict Wet Prairies (10)
☐ Known occurrence state/federal threatened or endangered species (10)
☐ Significant migratory songbird/water fowl habitat or usage (10)
☐ Category 1 Wetland. See Question 5 Qualitative Rating (-10)

-4 14.5

max 20pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.**6a. Wetland Vegetation Communities.**

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
☒ 1 Emergent
☐ Shrub
☐ Forest
☐ Mudflats
☐ Open water
☐ Other _____

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
☐ Moderately high(4)
☐ Moderate (3)
☐ Moderately low (2)
☐ Low (1)
☒ x None (0)

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- ☒ x Extensive >75% cover (-5)
☐ Moderate 25-75% cover (-3)
☐ Sparse 5-25% cover (-1)
☐ Nearly absent <5% cover (0)
☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussucks
☐ Coarse woody debris >15cm (6in)
☐ Standing dead >25cm (10in) dbh
☐ Amphibian breeding pools

Vegetation Community Cover Scale

- | | |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 0 | Absent or comprises <0.1ha (0.2471 acres) contiguous area |
| 1 | Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality |
| 2 | Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality |
| 3 | Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality |

Narrative Description of Vegetation Quality

- | | |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0 | Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species |
| 1 | Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp to |
| 2 | A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp |

Mudflat and Open Water Class Quality

- | | |
|---|-----------------------------------------|
| 0 | Absent <0.1ha (0.247 acres) |
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres) |
| 2 | Moderate 1 to <4ha (2.47 to 9.88 acres) |
| 3 | High 4ha (9.88 acres) or more |

Microtopography Cover Scale

- | | |
|---|------------------------------------------------------------------------------------------------|
| 0 | Absent |
| 1 | Present very small amounts or if more common of marginal quality |
| 2 | Present in moderate amounts, but not of highest quality or in small amounts of highest quality |
| 3 | Present in moderate or greater amounts and of highest quality |

14.5 GRAND TOTAL(max 100 pts)

ATTACHMENT B

REPRESENTATIVE PHOTOGRAPHS

ATTACHMENT B.1

REPRESENTATIVE WETLAND PHOTOGRAPHS

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

10/14/2016 3:34:58 PM

in

Case No(s). 16-1994-EL-BLN

Summary: Letter of Notification (2) electronically filed by Mr. Hector Garcia on behalf of AEP Ohio Transmission Company