



DEPARTMENT OF THE ARMY
ST. LOUIS DISTRICT, CORPS OF ENGINEERS
ROBERT A. YOUNG BUILDING - 1222 SPRUCE ST.
ST. LOUIS, MISSOURI 63103-2833

24 July 2018

Reply to:

Regional Planning and Environmental Division North
Environmental Compliance Section (PD-C)

Dear Sir or Madam:

The St. Louis District of the U.S. Army Corps of Engineers has prepared a draft Environmental Assessment (EA) with unsigned Finding of No Significant Impact (FONSI) to evaluate the exchange of lands and management responsibilities between the Department of the Army, U.S. Army Corps of Engineers, Rivers Project Office, and Ameren Corporation. The Water Resources Reform and Development Act of 2014 (WRRDA 2014) signed into law on 10 June 2014, provides authorization by Congress for this land exchange.

This document serves to notify the public of the proposed action and analyze the probable environmental impacts of the alternatives. You are receiving this letter because you may be interested in the proposed action. The electronic version of these documents are available online at:

<http://www.mvs.usace.army.mil/Portals/54/docs/pm/Reports/EA/DRAFTAmerenRPOUSACELandExchangeEAFONSIFY18.pdf>, or you may request a copy of the draft EA and FONSI be mailed to you.

The federal land proposed to be exchanged consists of approximately 84 acres (disposal tract) that is a portion of the approximately 227 acres of land leased from the U.S. Army Corps of Engineers by Ameren Corporation for the Portage Des Sioux Power Plant in St. Charles County, Missouri (Lease No. DA-23-065-CIVENG-64-651, Pool 26). The non-federal land proposed to be exchanged consists of approximately 68 acres (acquisition tract) owned by Ameren Corporation in Jersey County, Illinois. The FONSI summarizes the anticipated effects of the action on the environment, and is unsigned. The FONSI will be signed into effect only after comments received as a result of this public review have been carefully considered. A signed FONSI is required before implementation of the action can occur.

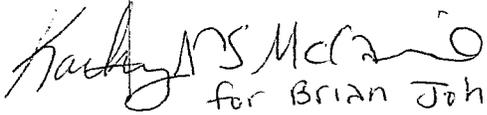
Please provide any comments you may have regarding this project. For questions, comments, or to request a printed copy, please contact: Dr. Teri Allen of the Environmental Compliance Section, **telephone** 314-331-8084, or **e-mail** at Teri.C.Allen@usace.army.mil. Written comments may be sent to the address below, ATTN: Environmental and Planning Section (PD-C, Allen). **Please respond by close**

of business on Thursday, 23 August 2018, in order to have your comments considered.

Address:

U.S. Army Corps of Engineers, St. Louis District
Regional Planning and Environmental Division North
Environmental Compliance Section (CEMVP-PD-C)
1222 Spruce Street
St. Louis, Missouri 63103-2833

Sincerely,



Katelyn S. McLean
for Brian Johnson

Brian L. Johnson
Chief, Environmental Compliance Branch

DRAFT ENVIRONMENTAL ASSESSMENT WITH DRAFT FINDING OF NO SIGNIFICANT IMPACT

**U.S. Army Corps of Engineers and Ameren Corporation Land Exchange
Rivers Project Office
St. Charles County, Missouri, and Jersey County, Illinois**



July 2018

U.S. Army Corps of Engineers
St. Louis District
Regional Planning & Environmental Division North (CEMVP-PD-C)
1222 Spruce Street
St. Louis, Missouri 63103-2833

Table of Contents

1	INTRODUCTION	3
1.1	Project Location.....	3
1.2	Project Need.....	3
1.3	Project Description.....	3
2	PROJECT AUTHORIZATION.....	5
2.1	Alternatives Considered.....	5
2.2	Alternative 1 - No Action.....	5
2.3	Alternative 2 – Land Exchange.....	5
2.4	Tentatively Selected Plan.....	5
3	AFFECTED ENVIRONMENT AND ENVIRONMENTAL IMPACTS.....	6
3.1	Topography and Geology.....	6
3.2	Aesthetics.....	6
3.3	Land Cover.....	7
3.4	Noise.....	7
3.5	Water Quality.....	8
3.6	Air Quality.....	9
3.7	Recreation.....	9
3.8	Prime and Unique Farmland.....	10
3.9	Traffic and Roadways.....	10
3.10	Socio-Economics and Demographics.....	12
3.11	Environmental Justice.....	12
3.12	Hazardous, Toxic, and Radioactive Water (HTRW).....	13
3.13	Cultural and Tribal Resources and Coordination.....	15
3.14	Biological Resources.....	15
3.15	Wetlands.....	16
3.16	Bald Eagle (<i>Haliaeetus leucocephalus</i>).....	17
3.17	Threatened and Endangered Species Biological Assessment.....	17
3.18	State Listed Species.....	26
3.19	Parks, National and Historic Monuments, National Seashores, Wild and Scenic Rivers, Wilderness Areas, Research Sites, Etc.	27
4	CLIMATE CHANGE AND GREENHOUSE GAS EMISSIONS.....	27
5	CUMULATIVE IMPACTS.....	30
6	RELATIONSHIP OF PLAN TO ENVIRONMENTAL REQUIREMENTS.....	31
7	COORDINATION, PUBLIC VIEWS, AND RESPONSES.....	32
8	LIST OF PREPARERS.....	34
9	LITERATURE CITED.....	35
	FONSI.....	36

DRAFT ENVIRONMENTAL ASSESSMENT
U.S. Army Corps of Engineers and Ameren Corporation Land Exchange
Rivers Project Office
St. Charles County, Missouri, and Jersey County, Illinois

1 INTRODUCTION

Sections 6005(b) and (g) of The Water Resources Reform and Development Act of 2014 (WRRDA 2014) provides for acquisition and conveyance of land in St. Charles County, Missouri, and Jersey County, Illinois. This Environmental Assessment evaluates the exchange of lands and management responsibilities between the Department of the Army, U.S. Army Corps of Engineers, Rivers Project Office (approximately 84 acres), and Ameren Corporation (approximately 68 acres).

1.1 Project Location

Federal land to be exchanged consists of approximately 84 acres (disposal tract) that is a portion of the approximately 227 acres of land leased from the U.S. Army Corps of Engineers by Ameren Corporation for the Portage Des Sioux Power Plant in West Alton, St. Charles County, Missouri (Lease No. DA-23-065-CIVENG-64-651, Pool 26).

Non-Federal land to be exchanged consists of approximately 68 acres (acquisition tract) of land owned by Ameren Corporation in Jersey County, Illinois, contained within the north half of section 23, township 6 north, range 11 west of the third principal meridian (Figure 1).

1.2 Project Need

The exchange of land between the U.S. Army Corps of Engineers (USACE) and Ameren Corporation for the Portage Des Sioux Power Plant would facilitate efficient land management and would provide maximum use of lands for authorized purposes for both parties.

1.3 Project Description

On conveyance via warranty deed by the Ameren Corporation to the United States of all right, title, and interest in and to the non-Federal land, the USACE shall convey via quitclaim deed to Ameren Corporation all right, title, and interest of the United States in and to the Federal land. The basis for all land exchanges will be a fair market value appraisal. If the appraised fair market value of the Federal land exceeds the appraised fair market value of the non-Federal land, Ameren Corporation shall make a cash payment to the United States reflecting the difference in the appraised fair market values.

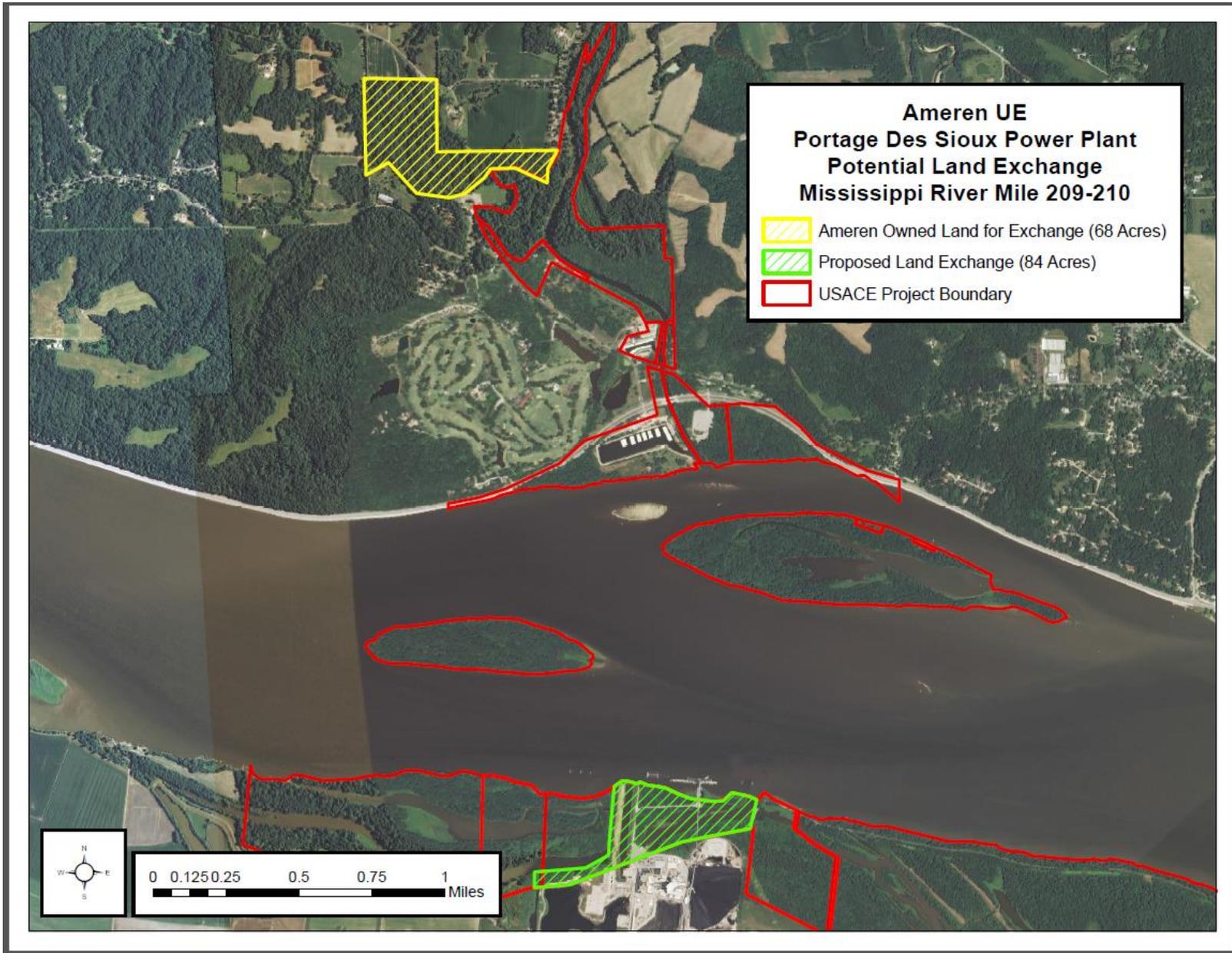


Figure 1. Location of proposed land exchange between USACE (St. Charles County, MO) and Ameren (Jersey County, IL). 4 | Page

Federal land to be exchanged consists of approximately 84 acres (disposal tract) that is a portion of the approximately 227 acres of land leased from the U.S. Army Corps of Engineers by Ameren Corporation for the Portage Des Sioux Power Plant in St. Charles County, Missouri (Lease No. DA-23-065-CIVENG-64-651, Pool 26). The lease will be terminated for the remaining 143 acres, and the lands will continue to be managed by the USACE (Figure 1).

1.4 Project Authorization

The Water Resources Reform and Development Act of 2014 (WRRDA 2014) signed into law on 10 June 2014, provides authorization by Congress for this land exchange.

2 ALTERNATIVES CONSIDERED

Due to the nature of the proposed action, the only alternatives considered in this Environmental Assessment include the No Action Alternative and the Tentatively Selected Plan.

2.1 Alternative 1 - No Action

The No Action Alternative assumes that the land exchange between the U.S. Army Corps of Engineers and Ameren Corporation would not be realized. Under this alternative, the land that is leased by U.S. Army Corps of Engineers to Ameren Corporation would continue to be leased, and the land owned by Ameren Corporation would continue to be owned and managed by Ameren Corporation.

2.2 Alternative 2 – Land Exchange

Under this alternative, the USACE and Ameren Corporation would exchange the identified land, eliminating the need for Ameren Corporation to lease the land from the USACE. USACE would in turn, acquire land adjacent to and contiguous with USACE owned and managed property. This exchange would improve land management and would provide for the maximum use of lands for both parties.

2.3 Tentatively Selected Plan

The Tentatively Selected Plan is Alternative 2 – Land Exchange. This land has been leased to a commercial entity for many years. As such, this land has been effectively reduced to perpetual private exclusive use and is not available for other uses nor is it available to the general public. Public funds are spent to administer the lease, however, the land is not available to the general public. USACE administrative procedures are often seen as cumbersome for for-profit tenants. Leaseholders are sometimes required to duplicate forms, inspections, and tests already requested by other licensing agencies. In some instances, USACE regulations are superseded by

more stringent ones required by agencies that directly regulate the specific activity, and this can cause confusion for lessees. This alternative would eliminate the existing industrial lease through land exchange and best supports federal and public interests. USACE would in turn, acquire land adjacent to and contiguous with USACE owned and managed property, which is available for public use.

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL IMPACTS

3.1 Topography and Geology

Acquisition Tract - The Ameren land (acquisition tract) to be exchanged is located in Jersey County, Illinois, and consists partially of moderate relief with hills and bottoms. Elevation within the tract ranges from approximately 430 to over 500 feet. Most of Jersey County (approximately the eastern three-fourths) is in the Springfield Plain, within the Till Plains section of the Central Lowland province.

Disposal Tract - The Federal land to be exchanged (disposal tract) is located in St. Charles, County, Missouri, and consists of relatively flat land, with elevations in the low 400 foot range.

Alternative 1 – No Action (Future without Project) – Current status anticipated to remain the same.

Alternative 2 – Land Exchange – No changes to topography or geology are anticipated due to the proposed land exchange.

3.2 Aesthetics

Acquisition Tract – The land currently owned by Ameren consists primarily of forest, which is generally deemed to be aesthetically pleasing to most individuals.

Disposal Tract - The land currently owned by USACE consists of fragmented areas of trees, interspersed with engineered and natural looking waterways used by the power plant. Additional areas are developed sections of the power plant. The industrial appearance is aesthetically pleasing to few individuals.

Alternative 1 – No Action (Future without Project) – Current status anticipated to remain the same.

Alternative 2 – Land Exchange – No changes to aesthetics are anticipated due to the proposed land exchange.

3.3 Land Cover

Acquisition Tract – The land currently owned by Ameren consists primarily of forest, and is dominated by silver maple, box elder, green ash, and mature eastern cottonwood. It is located adjacent to Piasa Creek Ecologic Area, which is classified as an environmentally sensitive area (USACE 2015a).

Disposal Tract – The land currently owned by USACE consists of fragmented areas of trees, interspersed with engineered and natural looking water ways used by the power plant. Additional areas are developed sections of the power plant. The area is classified as an industrial area (USACE 2015a).

Alternative 1 – No Action (Future without Project) – Current status anticipated to remain the same.

Alternative 2 – Land Exchange – No changes to land cover are anticipated due to the proposed land exchange.

3.4 Noise

Acquisition Tract – The noise in the vicinity of the Ameren property is generally associated with residential, and agricultural zones. Agricultural and open space areas typically have noise levels in the range of 34-70 decibels (dB; a measure of loudness) depending on their proximity to transportation arteries. During hunting season, gunshots in the reaching 140 dB may be heard, depending on distance and noise attenuation (Figure 2).

Disposal Tract – The land currently owned by USACE is located on the bank of the Mississippi River in Pool 26, upstream of Mel Price Locks and Dam. Noise associated with power generation, barge traffic, recreation, transportation, and agriculture are common. In general, noise emissions do not typically exceed about 60 dB, but may attain 90 dB or greater (Figure 2).

Alternative 1 – No Action (Future without Project) – Current status anticipated to remain the same.

Alternative 2 – Land Exchange – Minimal changes to noise are anticipated due to the proposed land exchange. It is anticipated that the forested area currently owned by Ameren would be used similar to the adjacent USACE property; which is open to regulated hunting and trapping in

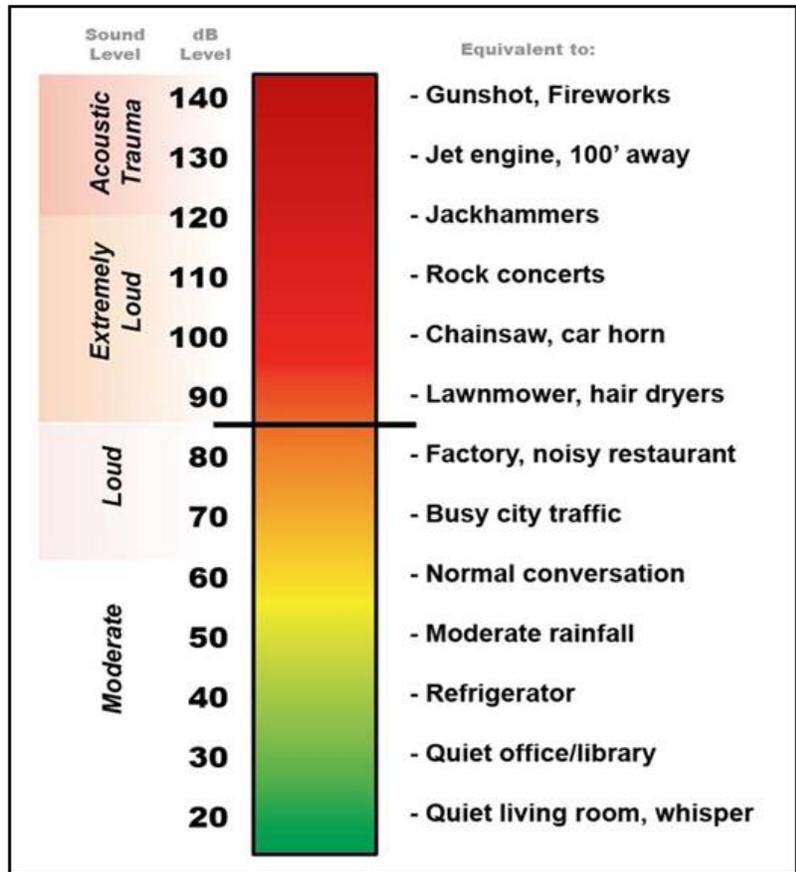


Figure 2. Examples of the sound level and decibel (dB) level of various sources.

cooperation with the Illinois Wildlife Code, and managed to limit development, and sustain and restore the natural riparian forest communities through protection and natural succession.

3.5 Water Quality

Portage Des Sioux Power Plant sits on the banks on the Mississippi River. This facility is permitted through the state of Missouri to discharge effluents directly and indirectly (i.e., through Poeling Lake) into the Mississippi River. The water quality of the Mississippi River in the vicinity of river miles 209-212 are not included as Section 303(d) Listed Waters by the state of Missouri (<https://modnr.maps.arcgis.com/apps/webappviewer/index.html?id=35beafa2d4614f18b1857ba574a8d4a4>). The Illinois EPA Section 303(d) list includes this section of the Mississippi River in Jersey County (HUC 7110009) as impaired for fish consumption due to mercury and polychlorinated biphenyls (PCBs), and for primary contact recreation due to fecal coliform (IEPA 2018). Mill Creek, a tributary of Piasa Creek that transverses the acquisition tract, is not listed as impaired by the Illinois EPA.

Alternative 1 – No Action (Future without Project) – Current status anticipated to remain the same.

Alternative 2 – Land Exchange – No changes to water quality are anticipated due to the proposed land exchange.

3.6 Air Quality

The Clean Air Act of 1963 requires the U.S. Environmental Protection Agency (USEPA) to designate National Ambient Air Quality Standards (NAAQS). The USEPA has identified standards for six criteria pollutants: ozone, particulate matter (PM₁₀ = less than 10 microns; and PM_{2.5} = less than 2.5 microns in diameter), sulfur dioxide, lead, carbon monoxide, and nitrogen dioxide.

Acquisition Tract – Jersey County, IL is currently considered as in attainment for current air quality standards (https://www3.epa.gov/airquality/greenbook/anayo_il.html).

Disposal Tract – St. Charles County, Missouri, is considered to be in a non-attainment status for 8-hour ozone (2008) (marginal) and PM_{2.5} (1997) (moderate) (https://www3.epa.gov/airquality/greenbook/anayo_mo.html).

Alternative 1 – No Action (Future without Project) – Current status anticipated to remain the same.

Alternative 2 – Land Exchange – No changes to air quality are anticipated due to the proposed land exchange.

3.7 Recreation

Acquisition Tract – The land currently owned by Ameren is private, and is therefore not managed for recreation.

Disposal Tract - The land currently owned by USACE has been leased to a commercial entity for many years. As such, this land has been effectively reduced to perpetual private exclusive use and is not available for other uses nor is it available to the general public. Public funds are spent to administer these leases, however, they are not available to the general public. (USACE 2015a).

Alternative 1 – No Action (Future without Project) – Current status anticipated to remain the same.

Alternative 2 – Land Exchange – Recreational opportunities are anticipated to greatly improve due to the proposed land exchange. It is anticipated that the forested area currently owned by Ameren would be used similar to the adjacent USACE property; which is open to regulated

hunting and trapping in cooperation with the Illinois Wildlife Code. The area is anticipated to be managed to limit development, and sustain and restore the natural riparian forest communities through protection and natural succession. This would allow for recreational opportunities such as photography, hiking, and wildlife viewing.

3.8 Prime and Unique Farmland

For the purpose of the Farmland Protection Policy Act (FPPA), farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forest land, pastureland, cropland, or other land, but not water or urban built-up land. Activities not subject to FPPA include projects on land used for water storage, and public lands previously converted to non-agricultural use.

Acquisition Tract – The land currently owned by Ameren is not used for as agricultural purposes.

Disposal Tract – The land currently owned by USACE is an industrial site and is not used for agricultural purposes.

Alternative 1 – No Action (Future without Project) – Current status anticipated to remain the same.

Alternative 2 – Land Exchange – No changes to prime of unique farmland are anticipated due to the proposed land exchange. No farmland would be removed from production as a result of the proposed land exchange.

3.9 Traffic and Roadways

Acquisition Tract – Access to the property currently owned by Ameren is facilitated by network of roadways located in Jersey County, Illinois. The property is bisected by Lockhaven Road (Figure 3).

Disposal Tract – Access to the property currently owned by USACE is facilitated by network of roadways located in St. Charles County, Missouri. Access by barge and watercraft is also available (Figure 3).

Alternative 1 – No Action (Future without Project) – Current status anticipated to remain the same.



Figure 3. Image showing access to the land tracts via roadways and the waterways.

Alternative 2 – Land Exchange – No changes to traffic or roadways are anticipated due to the proposed land exchange. Lockhaven Road is a paved road maintained by the county or township. It would remain intact and open.

3.10 Socio-Economics and Demographics

Acquisition Tract – According to 2010 census data for Jersey County, Illinois, there were approximately 8,828 households in the county, with an average of 2.5 person per household. The median value of owner-occupied housing units was \$129,900. The population was approximately 97.6% white, 0.4% black, 0.3% American Indian or Alaska Native, 0.3% Asian, 1.2% two or more races, and 1.0% Hispanic. According to 2012-2016 data, median household income was \$52,738. Approximately 9.1% of the population for whom poverty status is determined in Jersey County, IL (21,472 people) live below the poverty line. This is below the national poverty average of 15.1%.

Disposal Tract – According to 2010 census data for St. Charles County, Missouri, there were approximately 134,274 households in the county, with an average of 2.6 person per household. The median value of owner-occupied housing units was \$144,500. The population was approximately 90.7% white, 4.1% black, 0.2% American Indian or Alaska Native, 2.2% Asian, 1.8% two or more races, and 2.8% Hispanic. According to 2012-2016 data, median household income was \$75,603. Approximately 6.1% of the population for whom poverty status is determined in St. Charles County, MO (372,238 people) live below the poverty line. This is below the national poverty average of 15.1%.

Alternative 1 – No Action (Future without Project) – Current status anticipated to remain the same.

Alternative 2 – Land Exchange – No changes to socio-economics or demographics are anticipated due to the proposed land exchange.

3.11 Environmental Justice

Acquisition and Disposal Tracts – Environmental justice refers to fair treatment of all races, cultures and income levels with respect to development, implementation and enforcement of environmental laws, policies and actions. Environmental justice analysis was developed following the requirements of:

- Executive Order 12898 ("Federal Actions to Address Environmental Justice in Minority Population and Low-Income Populations," 1994)

- "Department of Defense's Strategy on Environmental Justice" (March 24, 1995).

The purpose of environmental justice analysis is to identify and address, as appropriate, human health or environmental effects of the proposed action on minority and low income populations. Following the above directives, the methodology to accomplish this includes identifying minority and low-income populations within the study area by demographic analysis. Data from the 2010 U.S. Census (<https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>) were utilized for this analysis. Data are included above in Section 3.10 – Socio-Economics and Demographics. Neither county exceeds a 20% poverty level or minority population.

Alternative 1 – No Action (Future without Project) – Current status anticipated to remain the same.

Alternative 2 – Land Exchange – Since this proposed land exchange is intended to eliminate the use of public funds spent on administering the lease on land which is not available to the general public, as well as to acquire private land for public enjoyment, no environmental justice issues are anticipated.

3.12 Hazardous, Toxic, and Radioactive Water (HTRW)

The U.S. Army Corps of Engineers regulations (ER-1165-2-132, ER 200-2-3) and District policy requires procedures be established to facilitate early identification and appropriate consideration of potential hazardous, toxic, or radioactive waste (HTRW) in reconnaissance, feasibility, preconstruction engineering and design, land acquisition, construction, operations and maintenance, repairs, replacement, and rehabilitation phases of water resources studies or projects by conducting Phase I Environmental Site Assessment (ESA). USACE specifies that assessments follow the process/standard practices for conducting Phase I Environmental Site Assessments (ESA) published by the American Society for Testing and Materials (ASTM).

This assessment was prepared using the following ASTM Standards:

- E1527-13: Standard Practice for Environmental Site Assessments – Phase I Environmental Site Assessment process
- E1528-06: Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (interview questionnaires)

- E2247-08 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process for Forestland or Rural Property

The purpose of a Phase I ESA (ESA) is to identify, to the extent feasible in the absence of sampling and analysis, the range of contaminants (i.e. RECs) within the scope of the U.S. Environmental Protection Agency's (EPA) Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and petroleum products. Current policy is to avoid known HTRW sites.

A Phase I Environmental Site Assessment was conducted for the Ameren property exchange. This due diligence effort is intended to provide the minimum information required to assess potential environmental liabilities associated with this project. The objective of the Phase I is to identify, to the extent feasible pursuant to the process described herein, recognized environmental conditions (RECs) in connection with a given property(s). This assessment revealed RECs, however, these RECs should not have any effect on the proposed land exchange.

Acquisition Tract – The Ameren parcel is a 68 acre site in Jersey County, Illinois. It is heavily wooded with the only structure being a tree stand. There were no environmental sites of concern discovered during the historical search. Therefore, there are no RECs associated with this parcel.

Disposal Tract – The Ameren Portage de Sioux Power Station located in St. Charles County, Missouri, adjacent to the USACE exchange property had the following items noted:

- Small quantity generators (SQGs). The status of being a SQG does not create a REC for this project. However, the potential of a REC does exist from a possible spill.
- Underground storage tank (UST) site with approximately 0.25 miles. This is not a REC.
- Two coal ash EPA sites within approximately 0.5 miles of the target property. The existence of these impoundments do not in themselves constitute a REC for this project. However, the potential of a REC does exist from a possible impoundment failure.
- Based upon available information, the location is not judged to be potential National Priorities List (NPL) site. This is not a REC.
- There are 2 WI MANIFEST sites within approximately 0.25 miles of the target property. No manifest violations were found.

Alternative 1 – No Action (Future without Project) – Current status anticipated to remain the same.

Alternative 2 – Land Exchange – An Environmental Site Assessment Phase I ESA was conducted in accordance with the scope and limitations of ASTM Practice E 1527 for the properties involved in the Ameren UE land exchange. No significant RECs were found to prevent the transfer of these properties. Therefore, no Phase II ESA is necessary for the proposed land exchange.

3.13 Cultural and Tribal Resources and Coordination

Acquisition Tract – Pursuant to Section 106 of the National Historic Preservation Act (P.L.89-665, as amended), and the implementing regulation 36CFR800, a letter requesting concurrence with the determination of no adverse effect was sent to the Illinois State Historic Preservation Office (IL SHPO) on 24 July 2018. The acquisition of the property would have no effect on historic properties. In addition, the 27 Native American tribes with which the St. Louis District regularly consults were offered the opportunity to comment on the proposed undertaking in a letter also dated 24 July 2018.

Disposal Tract – Pursuant to Section 106 of the National Historic Preservation Act (P.L.89-665, as amended), and the implementing regulation 36CFR800, a Phase I archaeological survey of the disposal tract was conducted during 6-7 June 2018. No historic or archaeological resources were found. A letter requesting concurrence with the determination of no adverse effect was sent to the Missouri State Historic Preservation Office (MO SHPO) on 24 July 2018. In addition, the 27 Native American tribes with which the St. Louis District regularly consults were offered the opportunity to comment on the undertaking in a letter also dated 24 July 2018.

Alternative 1 – No Action (Future without Project) – Current status anticipated to remain the same.

Alternative 2 – Land Exchange – No cultural or tribal resource issues are anticipated due to the proposed land exchange. No cultural resources were identified in the disposal tract. The acquisition tract would be the subject of archaeological investigations should any undertakings with the potential to disturb historic properties be proposed in the future, and would be the subject of renewed consultation with Illinois Historic Preservation Agency (IHPA) to address the specific impacts of said undertaking.

3.14 Biological Resources

Acquisition Tract – The land currently owned by Ameren consists primarily of forest, and is dominated by silver maple, box elder, green ash, and mature eastern cottonwood. It is located

adjacent to Piasa Creek Ecologic Area, which is classified as an environmentally sensitive area (USACE 2015a). Mill Creek, a tributary of Piasa Creek, also transverses the tract, providing aquatic habitat for a variety of fish including Bluegill, Channel Catfish, White Crappie and Yellow Bullhead.

Disposal Tract – The land currently owned by USACE consists of fragmented areas of trees, interspersed with engineered and natural looking waterways used by the power plant. Additional areas are developed sections of the power plant. Much of the area has been developed for industrial use. As a result, there are few aquatic, wetland, or terrestrial natural communities present within tract. Many of the natural communities have limited ecological importance because they are relatively small and fragmented as a result of the development. Most wildlife species are adapted to human disturbance, and consist of a variety of amphibians, reptiles, birds, and mammals. Additionally, the majority of aquatic resources are connected to the Mississippi River and therefore may act as backwater for aquatic organisms.

Alternative 1 – No Action (Future without Project) – Current status anticipated to remain the same.

Alternative 2 – Land Exchange – No adverse biological resource issues are anticipated due to the proposed land exchange. Conversely, acquisition of the tract currently owned by Ameren would allow the property to be used in a manner similar to the adjacent USACE property; which is managed to limit development and sustain and restore the natural riparian forest communities through protection and natural succession. This would be beneficial to terrestrial and aquatic resources in the area (with the exception of those individuals that may be hunted).

3.15 Wetlands

Wetlands subject to Section 404 of the Clean Water Act were identified by using National Wetland Inventory maps and local Corps GIS database.

Acquisition Tract – The land in Jersey County, IL, currently owned by Ameren contains approximately 58.0 acres of freshwater forested/shrub wetland, and 4.3 acres of open water riverine wetlands (Mill Creek).

Disposal Tract – The land in St. Charles County, Missouri, currently owned by USACE contains approximately 26.8 acres of freshwater forested/shrub wetland, 24.8 acres of open water lake, and 0.5 acres of open water riverine wetlands.

Alternative 1 – No Action (Future without Project) – Current status anticipated to remain the same.

Alternative 2 – Land Exchange – The proposed land exchange would result in the public gaining access to approximately 58.0 acres of freshwater forested/shrub wetland.

3.16 Bald Eagle (*Haliaeetus leucocephalus*)

On August 9, 2007 the Bald Eagle was removed from the Federal list of threatened and endangered species. However, the species remains protected under the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act. The BGEPA prohibits unregulated take of Bald Eagles, including disturbance. The U.S. Fish and Wildlife Service developed the National Bald Eagle Management Guidelines (USFWS 2007) to provide landowners, land managers, and others with information and recommendations regarding how to minimize potential project impacts to Bald Eagles, particularly where such impacts may constitute disturbance.

The Bald Eagle is identified as breeding and/or wintering along the Mississippi River. Winter use is highest where the river is ice-free and adequate perch sites are available. These areas are important, providing stable feeding sites during high caloric demand periods. Large concentrations of eagles often are associated with open water areas bordered by suitable perch trees. Trees within 100 feet of the shore are preferred (USFWS 2000).

The nearest known Bald Eagle nest is located approximately 3 miles from the Illinois disposal tract and four miles from the Missouri disposal tract.

Acquisition Tract – The land in Jersey County, IL, currently owned by Ameren contains no known Bald Eagle nests.

Disposal Tract – The land in St. Charles County, Missouri, currently owned by USACE contains no known Bald Eagle nests.

Alternative 1 – No Action (Future without Project) – Current status anticipated to remain the same.

Alternative 2 – Land Exchange – No Bald Eagle issues are anticipated due to the proposed land exchange.

3.17 Threatened and Endangered Species Biological Assessment

In compliance with Section 7(c) of the Endangered Species Act of 1973, as amended, official lists of species and critical habitats potentially occurring in the vicinity of the proposed land exchange was acquired from the USFWS Information for Planning and Conservation (IPaC) website at

(<https://ecos.fws.gov/ipac/>) on 16 July 2018 (Consultation Code: 03E18000-2018-SLI-1434 Event Code: 03E18000-2018-E-03132; Consultation Code: 03E18100-2018-SLI-0594 Event Code: 03E18100-2018-E-01361; Consultation Code: 03E14000-2018-SLI-2057 Event Code: 03E14000-2018-E-04421) (Table 1). Habitat requirements and impacts of the federal action are discussed for each listed species.

Table 1. Federally listed species potentially occurring in the vicinity of the proposed land exchange.

Species	Status	Habitat
Gray Bat (<i>Myotis grisescens</i>)	Endangered	Caves year-round (winter hibernacula and summer roosting). In the summer gray bats forage along rivers lakes, and creeks, and may roost under bridges.
Indiana Bat (<i>Myotis sodalis</i>)	Endangered	Caves, mines (winter hibernacula); trees (summer roosting); and small stream corridors with well-developed riparian woods; upland forests (foraging)
Northern Long-eared Bat (<i>Myotis septentrionalis</i>)	Threatened with 4(d) rule	Caves, mines; rivers and reservoirs adjacent to forests
Pallid Sturgeon (<i>Scaphirhynchus albus</i>)	Endangered	Missouri River; Mississippi River downstream of the Missouri River
Higgins Eye (pearly mussel) (<i>Lampsilis higginsii</i>)	Endangered	Upper Mississippi River, the St. Croix River between Minnesota and Wisconsin, the Wisconsin River in Wisconsin, and the lower Rock River between Illinois and Iowa.
Decurrent False Aster (<i>Boltonia decurrens</i>)	Threatened	Disturbed alluvial soils
Eastern Prairie Fringed Orchid (<i>Platanthera leucophaea</i>)	Threatened	Mesic to wet prairies and meadows

3.17.1 Gray Bat (*Myotis grisescens*)

The Gray Bat is a species that has a limited range in limestone karst areas of the southeastern United States, including several Illinois and Missouri counties. Gray Bats typically roost in caves year-round. During winter, Gray Bats hibernate in deep, vertical caves, and during summer, Gray Bats generally roost in various caves, but have been documented roosting under bridges and in

other structures. Gray Bats forage on a variety of night-flying aquatic and terrestrial insects along rivers, lakes, and creeks.

Gray Bats are endangered largely because of their habitat of living in large numbers in only a few caves; thus making the species vulnerable to human disturbance and habitat loss or modification. Disturbance of Gray Bats in their caves during their hibernation, can cause them to use their energy reserves and could lead to starvation. Disturbances to their caves during their nursing season (June and July) can frighten females causing them to drop non-volant pups to their death in panic to flee from the intruder. Additionally, many important caves that have been historically used by Gray Bats have been inundated by reservoirs. The commercialization of caves, and alterations of the air flow, temperature, humidity, and amount of light can make the cave unsuitable habitat for Gray Bats and drive bats away.

The fatal bat disease, white-nose syndrome (WNS), has not yet been documented to adversely affect the Gray Bat. However, because of Gray Bats are cave obligates, and considering how WNS has decimated other cave-dwelling bat species, WNS could be another significant threat to the Gray Bat.

Acquisition Tract – The land in Jersey County, IL, currently owned by Ameren does not contain any known caves or mines. Records indicate that a Gray Bat was caught in the vicinity of the acquisition tract in 2012.

Disposal Tract – The land in St. Charles County, Missouri, currently owned by USACE does not contain any known caves or mines.

Alternative 1 – No Action (Future without Project) – Current status anticipated to remain the same.

Alternative 2 – Land Exchange – No adverse biological issues are anticipated due to the proposed land exchange. Conversely, acquisition of the tract currently owned by Ameren which contains approximately 58.0 forested acres transected by Mill Creek, would allow the property to be used in a manner similar to the adjacent USACE property; which is managed to limit development and sustain and restore the natural riparian forest communities through protection and natural succession. The proposed land exchange would be beneficial to Gray Bats.

The St. Louis District has determined that the proposed land exchange “*may affect, but not likely to adversely affect Gray Bats*”.

3.17.2 Indiana Bat (*Myotis sodalis*)

The endangered Indiana Bat has been noted as occurring in several Illinois and Missouri counties. Indiana bats migrate seasonally between winter hibernacula and summer roosting habitats. Winter hibernacula includes caves and abandoned mines. Females emerge from hibernation in late March or early April to migrate to summer roosts. Females form nursery colonies under the loose bark of trees (dead or alive) and/or in cavities, where each female gives birth to a single young in June or early July. A maternity colony may include from one to 100 individuals. A single colony may utilize a number of roost trees during the summer, typically a primary roost tree and several alternates. Some males remain in the area near the winter hibernacula during the summer months, but others disperse throughout the range of the species and roost individually or in small numbers in the same types of trees as females.

Indiana Bat summer habitat consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields, and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥ 5 inches DBH that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet of other forested/wooded habitat. Trees with less than 5 inches DBH that have exfoliating bark, cracks, crevices, and/or hollows may have some potential to be male Indiana bat summer roosting habitat. However, early-successional, even-aged stands of trees less than 5 inches DBH is not typically considered to be suitable roosting habitat. However, early successional habitat with small diameter trees may be used as foraging habitat by Indiana Bats.

During the summer, Indiana bats frequent the corridors of small streams with well-developed riparian woods, as well as mature bottomland and upland forests. They forage for insects along stream corridors, within the canopy of floodplain and upland forests, over clearings with early successional vegetation (old fields), along the borders of croplands, along wooded fence rows, and over farm ponds and in pastures. It has been shown that the foraging range for the bats varies by season, age and sex and ranges up to 81 acres.

Disturbance and vandalism, improper cave gates and structures, natural hazards such as flooding or freezing, microclimate changes, land use changes in maternity range, and chemical contamination are the leading causes of population decline in the Indiana Bat (USFWS 2000, 2004).

Acquisition Tract – The land in Jersey County, IL, currently owned by Ameren contains approximately 58.0 acres of forest, transected by Mill Creek. Records indicate that an Indiana Bat was caught in the vicinity of the acquisition tract in 2012.

Disposal Tract – The land in St. Charles County, Missouri, currently owned by USACE contains approximately 26.8 acres of highly fragmented forest adjacent to a power plant.

Alternative 1 – No Action (Future without Project) – Current status anticipated to remain the same.

Alternative 2 – Land Exchange – No adverse biological issues are anticipated due to the proposed land exchange. Conversely, acquisition of the tract currently owned by Ameren which contains approximately 58.0 forested acres transected by Mill Creek, would allow the property to be used in a manner similar to the adjacent USACE property; which is managed to limit development and sustain and restore the natural riparian forest communities through protection and natural succession. This would be beneficial to Indiana Bats.

The St. Louis District has determined that the proposed land exchange “*may affect, but not likely to adversely affect Indiana Bats*”.

3.17.3 Northern Long-eared Bat (*Myotis septentrionalis*)

The Northern Long-eared Bat (*Myotis septentrionalis*) is a federally threatened bat species. The Northern Long-eared Bat is sparsely found across much of the eastern and north central United States, and all Canadian provinces from the Atlantic Ocean west to the southern Yukon Territory and eastern British Columbia.

Northern Long-eared Bats spend winter hibernating in large caves and mines. Summer habitat for the Northern Long-eared Bat includes a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields, and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥ 3 inches DBH that have exfoliating bark, cracks, crevices, and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit characteristics of suitable roost trees and are within 1,000 feet of other forested/wooded habitat. The Northern Long-eared Bat has also been observed roosting in human-made structures, such as buildings, barns, bridges, and

bat houses; therefore, these structures should also be considered potential summer habitat. Northern Long-eared Bats typically occupy their summer habitat from mid-May through mid-August each year and the species may arrive or leave some time before or after this period.

Forest fragmentation, logging and forest conversion are major threats to the species. One of the primary threats to the Northern Long-eared Bat is the fungal disease, white-nose syndrome, which has killed an estimated 5.5 million cave-hibernating bats in the Northeast, Southeast, Midwest and Canada.

Acquisition Tract – The land in Jersey County, IL, currently owned by Ameren contains approximately 58.0 acres of forest, transected by Mill Creek.

Disposal Tract – The land in St. Charles County, Missouri, currently owned by USACE contains approximately 26.8 acres of highly fragmented forest adjacent to a power plant.

Alternative 1 – No Action (Future without Project) – Current status anticipated to remain the same.

Alternative 2 – Land Exchange – No adverse biological issues are anticipated due to the proposed land exchange. Conversely, acquisition of the tract currently owned by Ameren which contains approximately 58.0 forested acres transected by Mill Creek, would allow the property to be used in a manner similar to the adjacent USACE property; which is managed to limit development and sustain and restore the natural riparian forest communities through protection and natural succession. This would be beneficial to Northern Long-eared Bats.

The St. Louis District has determined that the proposed land exchange “*may affect, but not likely to adversely affect Northern Long-eared Bats*”.

3.17.4 Pallid Sturgeon (*Scaphirhynchus albus*)

The Pallid Sturgeon is found in the Mississippi River downstream of its confluence with the Missouri River. Pallid Sturgeon forage for insects, crustaceans, snails, clams, and fish along the bottom of large rivers (USFWS 2016). These fish are most frequently caught over a sand bottom, which is the predominant bottom substrate within the species' range on the Mississippi River. Tag returns have shown that the species may be using a range of habitats in off-channel areas and tributaries of the Mississippi River. Loss of habitat has occurred due to anthropogenic changes which has ultimately decreased the availability of spawning habitat, reduced larval and juvenile rearing habitat, availability of seasonal refugia, and availability of foraging habitat.

Acquisition Tract – The land in Jersey County, IL, currently owned by Ameren contains is transected by Mill Creek, a tributary of Piasa Creek, upstream of Mel Price Locks and Dam (Pool 26).

Disposal Tract – The land in St. Charles County, Missouri, currently owned by USACE is adjacent to the Mississippi River, upstream of Mel Price Locks and Dam (Pool 26).

Alternative 1 – No Action (Future without Project) – Current status anticipated to remain the same.

Alternative 2 – Land Exchange – The Pallid Sturgeon is generally considered to occur in the Mississippi River downstream of its confluence with the Missouri River. Since it is rarely found upstream of Mel Price Locks and Dam, it is highly unlikely that it would be found in the vicinity of the acquisition or disposal tracts.

The St. Louis District has determined that the proposed land exchange “*may affect, but not likely to adversely affect Pallid Sturgeon*”.

3.17.5 Higgins Eye (*Lampsilis higginsii*)

The Higgins eye is a freshwater mussel of large rivers where it inhabits deep water areas with moderate currents suitable sand and gravel substrate. It historically occurred from St. Louis, MO, upstream to Keokuk, IA, within the Mississippi River and several tributaries along the Missouri and Mississippi rivers. These mussels partially bury themselves into the substrate and feed by filtering in microorganisms such as algae and bacteria from the water. Males release sperm and rely on the current so females can siphon the sperm to fertilize their eggs. After fertilization, the stored developing larvae (glochidia) are expelled back into the current and sometimes attach to the gills of host fish, where they develop further, detach, and settle on the river bottom where they can mature. Known host fish include Sauger, Walleye, Yellow Perch, Largemouth Bass, Smallmouth Bass, and Freshwater Drum. Threats to the Higgins eye include pollution in the form of excess sedimentation, other contaminants, and increased siltation from dredging that can degrade their required water quality and cover suitable substrate; as well as competition with non-native invasive species.

Acquisition Tract – The land in Jersey County, IL, currently owned by Ameren contains is transected by Mill Creek, a tributary of Piasa Creek, upstream of Mel Price Locks and Dam (Pool 26).

Disposal Tract – The land in St. Charles County, Missouri, currently owned by USACE is adjacent to the Mississippi River, upstream of Mel Price Locks and Dam (Pool 26).

Alternative 1 – No Action (Future without Project) – Current status anticipated to remain the same.

Alternative 2 – Land Exchange – The Higgins eye has not been found in the vicinity of the acquisition or disposal tracts.

The St. Louis District has determined that the proposed land exchange would have “*no effect on Higgins eye*”.

3.17.6 Decurrent False Aster (*Boltonia decurrens*)

Decurrent False Aster (*Boltonia decurrens*) is a perennial plant that exhibits annual and biennial lifecycles. Decurrent false aster is found on moist, sandy, floodplains and prairie wetlands along the Illinois and Mississippi Rivers. It relies on periodic disturbances such as flooding to scour away other plants that compete with it for habitat. The Decurrent False Aster is threatened due to excessive silting, intensive agricultural practices, floodplain disconnection which limits flooding disturbances, and herbicides.

Acquisition Tract – The land in Jersey County, IL, currently owned by Ameren contains approximately 58.0 acres of forest, transected by Mill Creek.

Disposal Tract – The land in St. Charles County, Missouri, currently owned by USACE contains approximately 26.8 acres of highly fragmented forest adjacent to a power plant.

Alternative 1 – No Action (Future without Project) – Current status anticipated to remain the same.

Alternative 2 – Land Exchange – No adverse biological issues are anticipated due to the proposed land exchange. Conversely, acquisition of the tract currently owned by Ameren which contains approximately 58.0 forested acres transected by Mill Creek, would allow the property to be used in a manner similar to the adjacent USACE property; which is managed to limit development and sustain and restore the natural riparian communities through protection and natural succession. This would be beneficial to Decurrent False Aster due to the opportunistic nature of this species to colonize open moist or wet areas that experience natural or man-made disturbances, its ability to disperse over shorter distances by seeds carried by wind or animals. Decurrent False Aster

has the potential to occur if appropriate habitat conditions and seed source become available within the acquisition tract.

The St. Louis District has determined that the proposed land exchange “*may affect, but not likely to adversely affect Decurrent False Aster*”.

3.17.7 Eastern Prairie Fringed Orchid (*Platanthera leucophaea*)

The Eastern Prairie Fringed Orchid occurs in a wide variety of habitats, from mesic prairie to wetlands such as sedge meadows, marsh edges, even bogs. Within Illinois, it is currently restricted to the northern part of the State, predominantly in counties bordering Lake Michigan (IDNR 2017a). It requires full sun for optimum growth and flowering and a grassy habitat with little or no woody encroachment.

This orchid is a perennial herb that grows from an underground tuber. Flowering begins from late June to early July, and lasts for 7 to 10 days. Blossoms often rise just above the height of the surrounding grasses and sedges. The more exposed flower clusters are more likely to be visited by the hawkmoth pollinators, though they are also at greater risk of being eaten by deer. Seed capsules mature over the growing season and are dispersed by the wind from late August through September.

The Eastern Prairie Fringed Orchid was listed as federally threatened on September 28, 1989. Early decline was due to the loss of habitat, mainly conversion of natural habitats to cropland and pasture. Current decline is mainly due to the loss of habitat from the drainage and development of wetlands. Other reasons for the current decline include succession to woody vegetation, competition from non-native species and over-collection (USFWS 2017a).

Acquisition Tract – The land in Jersey County, IL, currently owned by Ameren contains approximately 58.0 acres of forest, transected by Mill Creek.

Disposal Tract – The land in St. Charles County, Missouri, currently owned by USACE contains approximately 26.8 acres of highly fragmented forest adjacent to a power plant.

Alternative 1 – No Action (Future without Project) – Current status anticipated to remain the same.

Alternative 2 – Land Exchange – No adverse biological issues are anticipated due to the proposed land exchange. Conversely, acquisition of the tract currently owned by Ameren which contains approximately 58.0 forested acres transected by Mill Creek, would allow the property to be used

in a manner similar to the adjacent USACE property; which is managed to limit development and sustain and restore the natural riparian communities through protection and natural succession. While there are no known prairie remnants on the historic floodplain of the Mississippi River in the proposed project vicinity, the land exchange would be beneficial to Eastern Prairie Fringed Orchid if appropriate habitat type and seed source were available within the acquisition tract.

The St. Louis District has determined that the proposed land exchange “*may affect, but not likely to adversely affect Eastern Prairie Fringed Orchid*”.

3.18 State Listed Species

Acquisition Tract – Illinois Department of Natural Resources (IDNR) Ecological Compliance Assessment Tool (EcoCAT; IDNR Project Number 1900390) was used to identify any state-identified species that may exist in the vicinity of the tract currently owned by Ameren. EcoCAT identified American Eel (*Anguilla rostrata*; State Threatened), Gray Bat (*Myotis grisescens*; State Endangered), Indiana Bat (*Myotis sodalis*; State Endangered), and Timber Rattlesnake (*Crotalus horridus*; State Threatened) as being protected resources possibly occurring in the vicinity of the proposed land exchange area.

Disposal Tract – The Missouri Department of Conservation lists the following species as potentially occurring in St. Charles County, Missouri, (<https://mdc.mo.gov/property/greener-communities/heritage-program/results/county/St%20Charles>): American Bittern (*Botaurus lentiginosus*; State Endangered), Blanding's Turtle (*Emydoidea blandingii*; State Endangered), Central Mudminnow (*Umbra limi*; State Endangered), Decurrent False Aster (*Boltonia decurrens*; State Endangered, Federally threatened), Ebonyshell (*Reginaia ebenus*; State Endangered), Flathead Chub (*Platygobio gracilis*; State Endangered), Indiana Bat (*Myotis sodalis*; State Endangered, Federally Endangered), King Rail (*Rallus elegans*; State Endangered), Lake Sturgeon (*Acipenser fulvescens*; State Endangered), Northern Long-eared Bat (*Myotis septentrionalis*; State Endangered, Federally Threatened), and Pallid Sturgeon (*Scaphirhynchus albus*; State Endangered, Federally Endangered).

Alternative 1 – No Action (Future without Project) – Current status anticipated to remain the same.

Alternative 2 – Land Exchange – No adverse issues to state listed species are anticipated due to the proposed land exchange.

3.19 Parks, National and Historic Monuments, National Seashores, Wild and Scenic Rivers, Wilderness Areas, Research Sites, Etc.

Acquisition Tract – Illinois Department of Natural Resources (IDNR) Ecological Compliance Assessment Tool (EcoCAT; IDNR Project Number 1900390) was used to identify any state-identified habitat that may exist within the tract currently owned by Ameren. The Principia Hill Prairies East Illinois Natural Area Inventory (INAI) Site, and the Principia Hill Prairies - East Natural Heritage Landmark were identified during the review, but were found to be beyond the limits of the proposed land exchange area.

Disposal Tract – The land in St. Charles County, Missouri, currently owned by USACE contains approximately 26.8 acres of highly fragmented forest adjacent to a power plant. It is classified for industrial use.

Alternative 1 – No Action (Future without Project) – Current status anticipated to remain the same.

Alternative 2 – Land Exchange – No adverse issues to parks, national and historic monuments, national seashores, wild and scenic rivers, wilderness areas, research sites, etc., are anticipated due to the proposed land exchange.

4 CLIMATE CHANGE AND GREENHOUSE GAS EMISSIONS

Climate change is a fundamental environmental issue, and is a particularly complex challenge given its global nature and inherent interrelationships among its sources, causation, mechanisms of action, and impacts. Climate change science is evolving, and is only briefly summarized here. In 1970, the level of atmospheric carbon dioxide was estimated at 325 parts per million (ppm) (CEQ 1970). Since 1970, the concentration of atmospheric carbon dioxide has increased at a rate of about 1.6 ppm per year (1970-2012) to approximately 396 ppm in December 2014 (current globally averaged value). Based on the United States Global Change Research Program as well as other scientific records, it is now well established that rising global atmospheric greenhouse gas emission concentrations are significantly affecting the Earth's climate (USACE 2015b).

The approach at USACE is to consider the questions in need of climate change information at the geospatial scale where the driving climate models retain the climate change signal. At present, USACE judges that the regional, sub-continental climate signals projected by the driving climate models are coherent and useful at the scale of the 2-digit HUC (Water Resources Region) (Figure 4).



Figure 4. Water Resources Region 07: Upper Mississippi Region Boundary.

Within Water Resources Region 07, the general consensus in the recent literature points toward moderate increases in temperature and precipitation, and streamflow in the Upper Mississippi Region over the past century. In some studies, and some locations, statistically significant trends have been quantified. In other studies and locales within the Upper Mississippi Region, apparent trends are merely observed graphically but not statistically quantified. There has also been some evidence presented of increased frequency in the occurrence of extreme storm events (Villarini et al., 2013). Lastly, a transition point in climate data trends, where rates of increase changed significantly, was identified by multiple authors at approximately 1970 (USACE 2015b).

There is strong consensus in the literature that air temperatures will increase in the study region, and throughout the country, over the next century. The studies reviewed here generally agree on an increase in mean annual air temperature of approximately 2 to 6 °C (3.6 to 10.8 °F) by the latter half of the 21st century in the Upper Mississippi Region. Reasonable consensus is also seen in the literature with respect to projected increases in extreme temperature events, including more frequent, longer, and more intense summer heat waves in the long term future compared to the recent past (USACE 2015b).

Projections of precipitation found in a majority of the studies forecast an increase in annual precipitation and in the frequency of large storm events. However, there is some evidence presented that the northern portion of the Upper Mississippi Region will experience a slight decrease in annual precipitation. Additionally, seasonal deviations from the general projection pattern have been presented, with some studies indicating a potential for drier summers. Lastly, despite projected precipitation increases, droughts are also projected to increase in the basin as a result of increased temperature and ET rates (USACE 2015b).

A clear consensus is lacking in the hydrologic projection literature. Projections generated by coupling GCMs with macro scale hydrologic models in some cases indicate a reduction in future streamflow but in other cases indicate a potential increase in streamflow. Of the limited number of studies reviewed here, more results point toward the latter than the former, particularly during the critical summer months (USACE 2015b).

The trends and literary consensus of observed and projected primary variables noted above have been summarized for reference and comparison in the following figure (Figure 5) (USACE 2015b).

PRIMARY VARIABLE	OBSERVED		PROJECTED	
	Trend	Literature Consensus (n)	Trend	Literature Consensus (n)
Temperature		(7)		(14)
Temperature MINIMUMS		(3)		(4)
Temperature MAXIMUMS		(3)		(6)
Precipitation		(12)		(15)
Precipitation EXTREMES		(2)		(10)
Hydrology/ Streamflow		(10)		(15)

TREND SCALE

= Large Increase
 = Small Increase
 = No Change
 = Variable
 = Large Decrease
 = Small Decrease
 = No Literature

LITERATURE CONSENSUS SCALE

= All literature report similar trend
 = Low consensus
 = Majority report similar trends
 = No peer-reviewed literature available for review
(n) = number of relevant literature studies reviewed

Figure 5. Summary matrix of observed and projected climate trends and literary consensus.

5 CUMULATIVE IMPACTS

Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR Section 1508.7). Cumulative effects are defined as, “...the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.

No adverse cumulative impacts are anticipated as a result of the proposed land exchange. Each tract is anticipated to remain in its current state. The proposed action would facilitate efficient land management and would provide maximum use of lands for authorized purposes for both parties. The proposed land exchange would provide positive benefits to forest and wildlife resources using the USACE land. The proposed project, along with other present and foreseeable

future land restoration projects, would have a positive impact on the forest and wildlife resources within the Upper Mississippi River.

6 RELATIONSHIP OF PLAN TO ENVIRONMENTAL REQUIREMENTS

The relationship of the Tentatively Selected Plan (Alternative 2 – Land Exchange) to environmental requirements, environmental acts, and /or executive orders is shown in Table 2.

Table 2. Federal Policy Compliance Status.

Federal Policy	Compliance Status
National Environmental Policy Act, 42 USC 4321-4347	Partial ¹
Water Resources Development Acts of 1986, 1990, 2000 and 2007	Full
Migratory Bird Treaty Act of 1918, 16 USC 703-712	Full
Comprehensive Environmental Response, Compensation, and Liability Act, 42 USC 9601-9675	Full
Resource Conservation and Recovery Act, 42 USC 6901-6987	Full
Farmland Protection Policy Act, 7 USC 4201-4208	Full
Endangered Species Act, 16 USC 1531-1543	Partial ²
Food Security Act of 1985, 7 USC varies	N/A
Land and Water Conservation Fund Act, 16 USC 460d-461	N/A
National Historic Preservation Act, 16 USC 470 et seq.	Partial ³
Noise Control Act, 42 USC 7591-7642	Full
Clean Air Act, 42 USC 7401-7542	Full
Prevention, Control, and Abatement of Air and Water Pollution at Federal Facilities (EO 11282 as amended by EOs 11288 and 11507)	Full
Protection and Enhancement of the Cultural Environment (EO 11593)	Full
Floodplain Management (EO 11988 as amended by EO 12148)	Full
Protection of Wetlands (EO 11990 as amended by EO 12608)	Full
Protection and Enhancement of Environmental Quality (EO 11991)	Full
Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (EO 12898)	Full

Protection of Migratory Birds (EO 13186)	Full
Bald and Golden Eagle Protection Act, 42 USC 4151-4157	Full
Clean Water Act, 33 USC 1251-1375	Full
Rivers and Harbors Act, 33 USC 401-413	Full
Fish and Wildlife Coordination Act, 16 USC 661-666c	Partial ²

¹ Full compliance after submission for public comment and signing of FONSI

² Required permits, coordination will be sought during document review

³ Full compliance to be achieved with SHPO’s concurrence with conclusions

7 COORDINATION, PUBLIC VIEWS, AND RESPONSES

Notification of this Draft Environmental Assessment and unsigned Finding of No Significant Impact was sent to the officials, agencies, organizations, and individuals listed below for review and comment (Table 3). Additionally, an electronic copy is available on the U.S. Army Corps of Engineers St. Louis District's website at

<http://www.mvs.usace.army.mil/Missions/ProgramsProjectManagement/PlansReports.aspx>

during the public review period.

Please note that the Finding of No Significant Impact is unsigned. These documents will be signed into effect only after having carefully considered comments received as a result of this public review.

To assure compliance with the National Environmental Policy Act, Endangered Species Act, and other applicable environmental laws and regulations, coordination with these agencies will continue as required throughout the planning and construction phases of the proposed levee repairs.

Table 3. Notification of availability of a draft Environmental Assessment and unsigned Finding of No Significant Impact was sent to the following entities.

U.S. Senator Roy Blunt (MO) 260 Russell Senate Office Building Washington, DC 20510	U.S. Senator Richard Durbin (IL) 711 Hart Senate Building Washington, DC 20510
U.S. Senator Claire McCaskill (MO) 730 Hart Senate Office Building Washington, D.C. 20510	U.S. Senator Tammy Duckworth (IL) G12 Dirksen Senate Office Building Washington DC 20510

<p>U.S. Representative Blaine Luetkemeyer (MO District 3) U.S. House of Representatives 2440 Rayburn House Office Bldg. Washington, DC 20515</p>	<p>U.S. Representative Rodney Davis (IL District 13) 1740 Longworth House Office Building Washington, DC 20515</p>
<p>Larry Shepard US EPA Region 7 (MO) NEPA Team 11201 Renner Blvd. Lenexa, Kansas 66219</p>	<p>Kenneth A. Westlake US EPA, Region 5 (IL) 77 West Jackson Blvd E19J Chicago, IL 60604-3590</p>
<p>Matt Mangan Acting Field Supervisor U.S. Fish and Wildlife Service Marion Illinois Suboffice (ES) 8588 Route 148 Marion, Illinois 62959</p>	<p>This Cell Intentionally Left Blank</p>
<p>Federal Emergency Management Agency 1 Memorial Drive St. Louis, MO 63102</p>	<p>Federal Emergency Management Agency 536 South Clark Street, 6th Floor Chicago, IL 60605</p>
<p>Matt Vitello, P.E. Policy Coordinator Missouri Department of Conservation PO Box 180 Jefferson City, MO 65102</p>	<p>Adam Rawe Resource Planner Impact Assessment Section Illinois Department of Natural Resources One Natural Resources Way Springfield, IL 62702</p>
<p>Missouri Department of Natural Resources Sara Parker Pauley, Director P.O. Box 176 Jefferson City, MO 65102</p>	<p>This Cell Intentionally Left Blank</p>
<p>Sierra Club, Missouri Chapter 2818 Sutton Avenue St. Louis, MO 63143</p>	<p>Sierra Club, Piasa Palisades Group 200 W 3rd Street #251 Alton, IL 62002</p>
<p>The Nature Conservancy Missouri Field Office P.O. Box 440400 Saint Louis, MO 63144</p>	<p>The Nature Conservancy Illinois Field Office 8 S. Michigan Avenue, Suite 900 Chicago, IL 60603</p>
<p>Izaak Walton League of America Ron Moore, President Illinois Division 55 Ridgecrest Drive Decatur, IL 62521</p>	<p>Kathy Andria American Bottoms Conservancy P.O. Box 4242 Fairview Heights, IL 62208</p>

8 LIST OF PREPARERS

Teri Allen, Ph.D.; Chief, Environmental Compliance Section; Aquatic Ecologist

Experience: 10 years private sector; 17 years Environmental Branch, USACE

Role: Environmental Compliance Review

James E. Barnes; District Archaeologist

Experience: 8 years private sector; 22 years Center of Expertise, Curation and Maintenance of Archaeological Collections

Role: National Historic Preservation Act Analysis and Compliance

Kevin Slattery; Supervisory Environmental Specialist

Experience: 20+ years USACE

Role: Hazardous, Toxic, Radioactive Waste Environmental Review

Robert Cosgriff; Environmental Stewardship Team Lead; Forester

Experience: 10 years Illinois Natural History Survey, 8 years USACE

Role: Project Development and Review

Tim Kennedy; Realty Specialist

Experience: 9 years Real Estate Division, USACE

Role: Real Estate

9 LITERATURE CITED

H.R. 3080 — 113th Congress: Water Resources Reform and Development Act of 2014.”

www.GovTrack.us. 2014. 10 June 2014

<https://www.govtrack.us/congress/bills/113/hr3080>.

IEPA 2018. Integrated Water Quality Report and Section 303(d) List 2018, Appendix A-2. Illinois' 2018 303(d) List (sorted by name).

U.S. Army Corps of Engineers. 2000. Biological Opinion for the Operation and Maintenance of the 9-Foot Navigation Channel on the Upper Mississippi River System. U.S. Fish and Wildlife Service.

U.S. Army Corps of Engineers. 2015a. Rivers Project Master Plan, Mississippi & Illinois Rivers, Design Memorandum No. 3, (Prepared 2001, Updated March 2015)

<http://www.mvs.usace.army.mil/Portals/54/docs/recreation/rivers/MasterPlan/2015MasterPlan/Rivers%20Project%20Master%20Plan%202015%20-%20Pool%2026%20Maps.pdf>

U.S. Army Corps of Engineers. 2015b. Recent U.S. Climate Change and Hydrology Literature Applicable to US Army Corps of Engineers Missions – Water Resources Region 07, Upper Mississippi. Civil Works Technical Report, CWTS-2015-13, USACE, Washington, D.C.

http://www.corpsclimate.us/docs/rccvarreports/USACE_REGION_07_Climate_Change_Report_CWTS-2015-13_Lo.pdf

U.S. Fish and Wildlife Service. 2007. National Bald Eagle Management Guidelines.

DRAFT FINDING OF NO SIGNIFICANT IMPACT

U.S. Army Corps of Engineers and Ameren Corporation Land Exchange Rivers Project Office St. Charles County, Missouri, and Jersey County, Illinois

1. In accordance with the National Environmental Policy Act, I have reviewed and evaluated the documents concerning the land exchange between the U.S. Army Corps of Engineers (USACE) and Ameren Corporation. The exchange of land between the U.S. Army Corps of Engineers and Ameren Corporation for the Portage Des Sioux Power Plant would facilitate efficient land management and would provide maximum use of lands for authorized purposes for both parties.
2. Federal land to be exchanged consists of approximately 84 acres (disposal tract) that is a portion of the approximately 227 acres of land leased from the U.S. Army Corps of Engineers by Ameren Corporation for the Portage Des Sioux Power Plant in St. Charles County, Missouri (Lease No. DA-23-065-CIVENG-64-651, Pool 26). The non-Federal land to be exchanged consists of approximately 68 acres (acquisition tract) of land owned by Ameren Corporation in Jersey County, Illinois, which is adjacent to and contiguous with USACE owned and managed property. This exchange would improve land management and would provide for the maximum use of lands for both parties
3. As part of this evaluation, I have considered:
 - a. Existing Resources and Future without Project for Alternative 1 – No Action;
 - b. Impacts to existing resources for Alternative 2 – Land Acquisition (Recommended Plan).
4. The possible consequences of these alternatives have been studied for physical, environmental, cultural, social and economic effects. Significant factors evaluated as part of my review include:
 - a. The Proposed Action would facilitate efficient land management and would provide maximum use of lands for authorized purposes for both parties. On conveyance via warranty deed by the Ameren Corporation to the United States of all right, title, and interest in and to the non-Federal land, the USACE shall convey via quitclaim deed to Ameren Corporation all right, title, and interest of the United States in and to the Federal land. The basis for all land exchanges will be a fair market value appraisal. If the appraised fair market value of the Federal land exceeds the appraised fair market value of the non-Federal land, Ameren Corporation shall make a cash payment to the United States reflecting the difference in the appraised fair market values.

- b. The project would not adversely impact the physical environment (e.g., topography and geology; land cover; water quality; air quality; prime and unique farmland; traffic and roadways; greenhouse gases, or climate change).
 - c. No significant hazardous and toxic waste (HTRW) range of contaminants (RECs) were found to prevent the transfer of these properties.
 - d. The project would not adversely impact the socioeconomic environment (e.g., recreation, aesthetics, noise, recreation; or demographics).
 - e. No disproportionately high and adverse human health or environmental impacts on minority populations or low-income populations would occur (environmental justice).
 - f. No significant impacts are anticipated to biological resources, including wetlands, forests, or fish and wildlife resources.
 - g. No significant impacts to parks, national and historic monuments, national seashores, wild and scenic rivers, wilderness areas, or research sites are anticipated.
 - h. The proposed action would have no effect upon significant known historic properties or archaeological resources.
 - i. The proposed action would have no effect upon significant tribal resources.
 - j. No adverse impacts to federally threatened or endangered species are anticipated. Conversely, the Proposed Action is anticipated to enhance Gray Bat, Indiana Bat, and Northern Long-eared Bat habitat.
 - k. No significant cumulative impacts are anticipated.
5. Based on the evaluation and disclosure of impacts contained within the Environmental Assessment, I find no significant impacts to the human environment are likely to occur as a result of the proposed action. Therefore, an Environmental Impact Statement will not be prepared prior to proceeding with the proposed land exchange between the U.S. Army Corps of Engineers and Ameren Corporation.

Date

Bryan K. Sizemore
Colonel, U.S. Army
District Commander