Incidental Take Permit Application and Conservation Plan for the Regal Fritillary Butterfly (*Speyeria idalia*) and Illinois Chorus Frog (*Pseudacris illinoensis*)

DAKOTA ACCESS, LLC

Dakota Access Pipeline, LLC

Dakota Access Pipeline Project
Project No. 84099

April 2015

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1.0 INTRODUCTION

This Conservation Plan has been prepared in accordance with the requirements outlined in Title 17, Chapter I(c), Section 1080 of the Illinois Administrative Code (Incidental Taking of Endangered or Threatened Species). Under Section 1080 the Illinois Department of Natural Resources (IDNR) can authorize the incidental take of species listed as endangered or threatened by the State of Illinois with an approved Conservation Plan. This Conservation Plan was prepared for Dakota Access Pipeline, LLC's (Dakota Access) application for incidental take authorization (ITA) from IDNR for unavoidable impacts to the Illinois chorus frog (*Pseudacris illinoensis*) and the regal fritillary butterfly (*Speyeria idalia*). Consultations are ongoing with the U. S. Fish and Wildlife Service (USFWS) for potential affects to species listed as federally threatened or endangered, as per Section 7 of the Endangered Species Act of 1973 (ESA, as amended).

This Conservation Plan includes a description of the proposed Dakota Access Pipeline (DAPL) Project, biological data on the Illinois endangered or threatened species that may be affected by the DAPL Project, anticipated effects upon these species, measures that would be implemented to minimize or mitigate adverse effects, a description of project alternatives, an assessment of take, and an implementing agreement.

2.0 CONSERVATION PLAN

This chapter provides a description of the DAPL Project, biological data on the Illinois endangered or threatened species that may be affected by the proposed project, anticipated effects upon these species, and measures to minimize or mitigate adverse effects.

2.1 Project Purpose and Need

The DAPL Project's purpose is to move an economical, abundant, reliable, and domestic supply of crude oil from the Bakken and Three Forks production region in North Dakota to a crude oil market hub located near Patoka, Illinois. The Dakota Access Pipeline is being designed to safely carry 570,000 barrels per day (bpd) or more of light sweet crude (approximately 450,000 bpd initially) through the States of North Dakota, South Dakota, Iowa, and Illinois and ultimately terminate in Patoka, Illinois. From the Patoka hub, the crude oil would be transported by other pipelines to refineries located in the Midwest and the Gulf Coast, where 80 percent of the U.S. refining capabilities exist today to further our Country's goal of energy independence.

Dakota Access has secured binding long term transportation and deficiency contracts from multiple committed shippers to support development of the Dakota Access Pipeline with a crude oil transportation capacity of approximately 450,000 bpd, with 90 percent of the transportation capacity subscribed by those committed shippers and the remaining 10 percent of the transportation capacity reserved for walk-up shippers. Transportation service on the DAPL Project would be provided by Dakota Access pursuant to the Interstate Commerce Act and in accordance with the rules and regulations of the Federal Energy Regulatory Commission for common carrier crude oil pipeline transportation service thereunder. Subscriptions from committed shippers were obtained by Dakota Access in connection with an initial open season that ran from March 12 to May 23, 2014, and an expansion open season that commenced on September 23, 2014, and would conclude in December 2014.

The pipeline would not only provide a long term safe, reliable, and energy efficient option to move crude oil out of the Bakken and Three Forks production area to continue to enhance America's energy independence, it would also provide direct benefits to communities located along and near the DAPL Project route. These benefits would include, but not be limited to, providing: temporary construction employment; full time, local jobs to operate and maintain the pipeline; ROW payments; additional sales tax revenues from the sale of goods and services during construction and long term to operate and maintain the pipeline; annual State and local community revenue from property taxes; and long term

support of regional contractors, manufacturers, distributers, and retailers through ongoing purchase of goods and services to operate and maintain the DAPL Project.

2.2 Project Location and Description

The DAPL Project is a proposed 1,134 mile, 12-inch to 30-inch crude oil pipeline system through the states of North Dakota, South Dakota, Iowa, and Illinois, ultimately terminating in Patoka, Illinois. Within Illinois, the DAPL Project would involve the construction and operation of approximately 186 miles of new 30-inch diameter pipeline and other ancillary facilities.

The proposed pipelines would be constructed primarily through agriculture, open land, industrial, residential, and forest land uses. The DAPL Project is located within the following U.S. Geological Survey topographic quadrangles: Versailles, Meredosia, Mount Sterling, Cooperstown, Manchester, Nortonville, Lynnville, Franklin, Florence, Scottville, Palmyra, Winchester, Carlinville West, Carlinville East, Gillespie North, Litchfield, Mulberry Grove, Sorento North, Greenville, Hagarstown, Mount Olive, Coffeen, Wildcat Lake, and Patoka.

2.3 Protected Species

The DAPL Project area includes terrestrial and aquatic habitats that may support plant and wildlife species listed as either threatened or endangered pursuant to the ESA of 1973 (as amended) and the Illinois Endangered Species Act (520 ILCS 10/7). Dakota Access, with the assistance of Cardno and Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell), consulted with IDNR and conducted desktop reviews and field surveys to identify protected species habitat associated with the DAPL Project components proposed in Illinois.

2.3.1 Overview of Protected Species Habitats

Listed species that could potentially occur in the DAPL Project area were identified through consultation with IDNR, review of IDNR species lists, and literature review. Dakota Access met with representatives from the IDNR on September 23, 2014, to discuss the DAPL Project and potential impacts to listed species. On January 9, 2015, the IDNR provided a consultation letter outlining species of concern and associated recommendations for addressing potential impacts from the DAPL Project to these species (Appendix A).

Based on the results of consultations with IDNR, it was determined that the DAPL Project could affect potential habitat of the State-threatened regal fritillary and Illinois chorus frog, herein referred to as the "covered species," within the Illinois River floodplain at the location crossed by the proposed Project. Desktop reviews and environmental surveys included endangered species resource assessments in

accordance with USFWS and IDNR. This Conservation Plan outlines the results of the desktop and field investigations used to determine the likely presence or absence of these listed species' habitat along the proposed DAPL Project route, potential impacts to these species, and the proposed minimization and mitigation options.

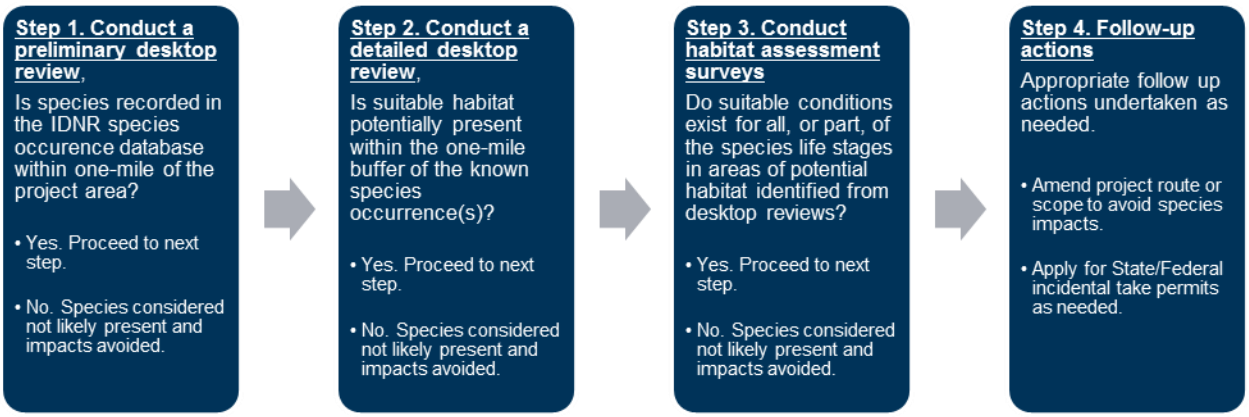
Based on the results of occurrence data obtained from the IDNR, both covered species have been previously documented within the proposed Project area east of the Illinois River and west of State Road 100. Within this portion of the Illinois River floodplain, the landscape is heavily farmed, with a mosaic of forested, grassland, agricultural, emergent herbaceous wetland, open water, and developed areas occurring along the east side of the Illinois River. Soil types range from sand to silt loams. Habitat within the DAPL Project corridor here is similar to the general landscape, with potential and suitable habitat occurring almost exclusively east of the Illinois River.

A geographic information system (GIS) land use analysis was conducted on this portion of the Project corridor to identify potential available habitats for these species. Based on this assessment and known locations for these species, potentially suitable habitats for the Illinois chorus frog and regal fritillary butterfly were identified interspersed within an area that would be spanned by the DAPL Project for approximately 20,800 feet (3.9 miles) on the eastern floodplain of the Illinois River. Of this total crossing distance, land use comprises approximately 2,800 feet (14 percent) of forested land, 10,400 feet (50 percent) of grassland, 5,400 (26 percent) feet of agricultural land, 1,250 feet (6 percent) of emergent herbaceous wetland, 700 feet (3 percent) of open water, and approximately 250 feet (1 percent) of developed areas (e.g., roadways).

2.3.2 Species Assessment Process

Dakota Access and its consultants undertook a structured assessment and evaluation process for identifying the likely presence or absence of habitat for covered species along the DAPL Project corridor. This process (Figure 2-1) involved a desktop-based geospatial analysis to refine the survey area down to locations of potential suitable habitat (illustrated in Steps 1 and 2, below). An overview map of the habitat assessment area is shown in Figure 2-2. Upon completion of the desktop analysis, field-based habitat assessments were conducted (where access was granted) in locations of potential suitable habitat (Step 3).

Figure 2-1: Species Assessment Process for Determining Presence/Absence of Listed Species



2.3.3 Regal Fritillary Butterfly

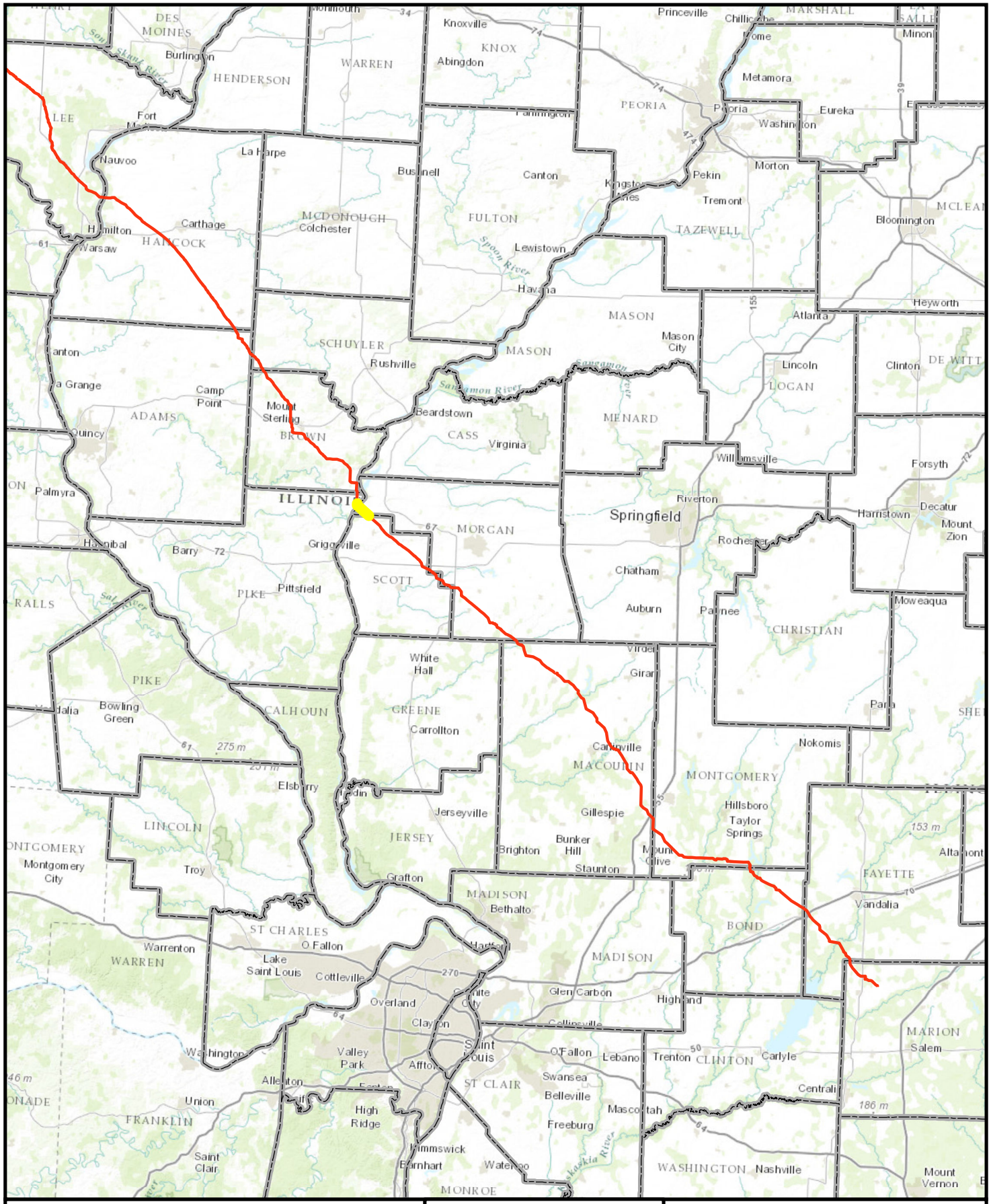
The following outlines the known habitat needs (based on available literature), known locations in the DAPL Project area based on NHI data provided by the IDNR, and the habitat survey results for the regal fritillary butterfly.

2.3.3.1 Habitat Requirements

Habitat condition, patch size, vegetation requirements, and basic life history contribute to the habitat requirements of the regal fritillary butterfly, as follows:

- **Habitat Condition**: According to species profiles, habitat of the regal fritillary butterfly consists of tallgrass prairie and other open, sunny locations, including meadows and marshes (Vaughan and Shepherd, 2005). Habitats are open grasslands, ranging from xeric to hydric, and flat to hilly (NatureServe, 2014).

- **Patch Size**: No patch size information is available for Illinois. However, in Wisconsin, large grassland areas of at least 100 acres with prairie remnants or lightly grazed pastures containing native vegetation are most likely to support the species. Some studies suggest that this species may require relatively large habitats (123 acres) for a marginally viable occurrence (NatureServe, 2014).



Potential Protected Species Habitat

Proposed Pipeline

20 10 0 20

Scale in Miles

NORTH

DAKOTA ACCESS, LLC

Figure 2-2
Vicinity Map
Dakota Access Pipeline Project
Protected Species
Habitat Assessment

Source: ESRI

Issued: 4/22/2015

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- **Vegetation Requirements**: Populations require a large number of violet plants (the larval host), primarily prairie violet (*Viola pedatifida*), birdsfoot violet (*V. pedata*), and arrowleaf violet (*V. sagittata*). In Illinois, the species has been observed using the Eurasian species, Johnny-jump-up (*Viola tricolor*) (NatureServe, 2014; Wisconsin DNR, 2011; Vaughan and Shepherd, 2005). A critical habitat feature is the availability of nectar sources during the adult flight. Suitable nectar sources are numerous and include thistle (*Cirsium sp.*), milkweed (*Asclepias sp.*), bergamot (*Monarda fistulosa*), and asters (*Aster sp.*) (Wisconsin DNR, 2011). Other nectar plants include *Liatris*, *Echinacea*, *Eupatorium spp.*, ironweeds, *Decodon*, and probably less favored but important late in the season, *Aster* and *Solidago* species (NatureServe, 2014).

- **Basic Life History**: Eggs are laid singly on dead leaves and pebbles by females walking through the vegetation. A female may lay more than 2,000 eggs. Caterpillars hatch and overwinter without feeding. In spring, they eat leaves of the violets. There is one flight period from mid-June to mid-August (Vaughan and Shepherd, 2005).

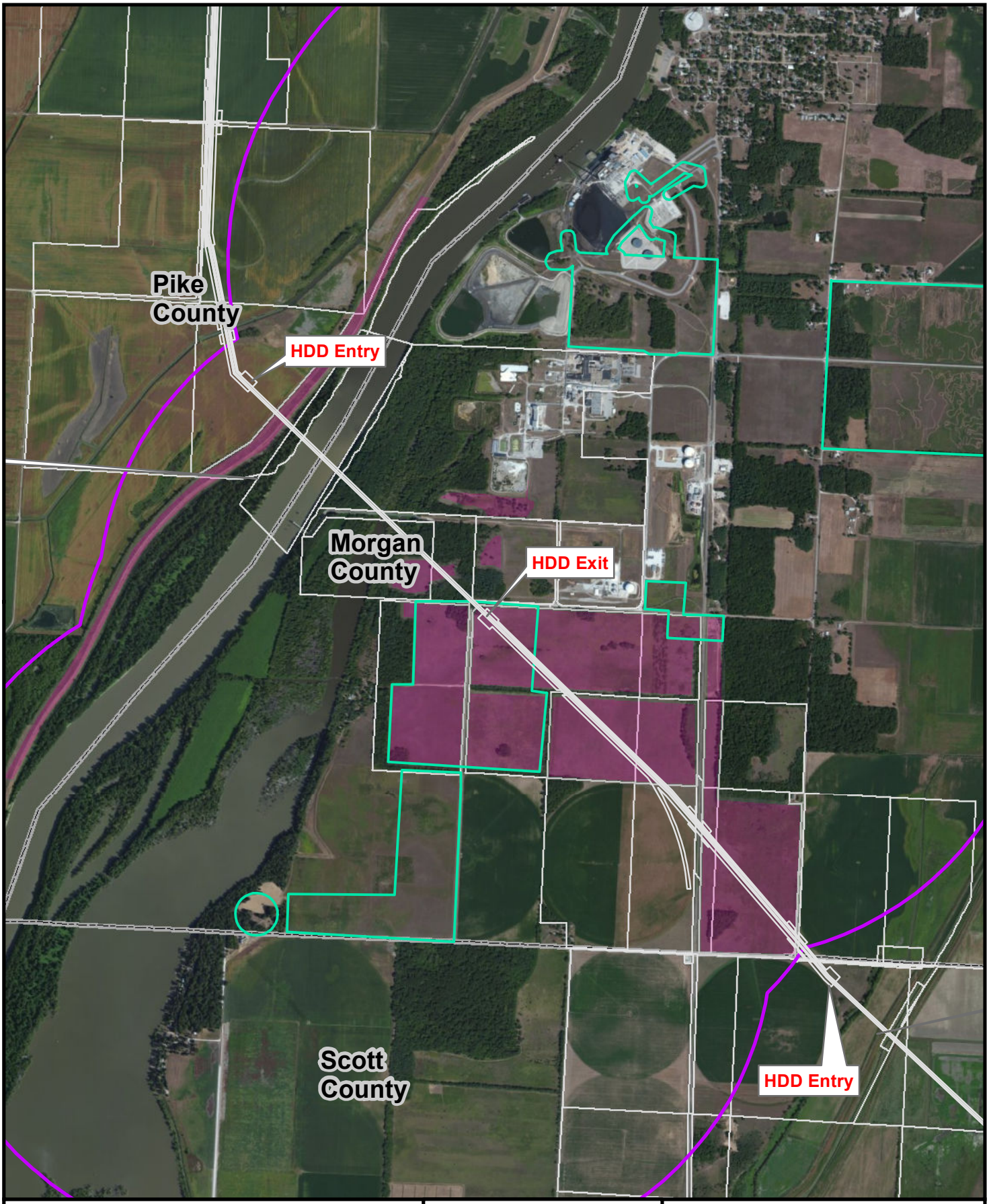
2.3.3.2 Species Status in the Project Area

The regal fritillary butterfly has a broad range reaching from the Great Plains to the east coast in North America (Selby, 2007). Most Illinois records are from the northern half of the State, and due to the species' rarity in Illinois, it is listed as a State-threatened species. The regal fritillary is known to occur near the DAPL Project corridor in Morgan County. LeGesse (2013) reported the regal fritillary butterfly from sites within 1 mile of the DAPL Project corridor, and the Illinois Natural Heritage Database contains occurrence records of the regal fritillary butterfly that would be crossed by the Project approximately 3,000 feet east of the Illinois River. Despite these occurrence records, LeGesse (2013) noted that an extreme drought that occurred during 2012 may have negatively impacted regal fritillary butterfly populations near Meredosia, to the point of essentially eliminating them from the area. LeGesse expected repopulating to occur over time, but at the time of his 2014 report, he thought that the species was not currently residing in the area. Figure 2-3 shows previously documented locations of the regal fritillary.

2.3.3.3 GIS and Field Habitat Surveys

Both desktop GIS and field habitat surveys were conducted for the regal fritillary butterfly, as follows:

- **Step 1. Preliminary Desktop Review**: GIS analysts conducted an initial screening of State-listed species resource records provided by IDNR for the DAPL Project on October 15, 2014. A 1-mile assessment buffer (measured from the edge of each mapped occurrence) was established around each known occurrence of regal fritillary butterfly.



Proposed Pipeline
Workspace
Regal Fritillary - Previously Recorded Habitat
Regal Fritillary - Search Area
Regal Fritillary - Potential Habitat

2,000 1,000 0 2,000
Scale in Feet

NORTH

DAKOTA ACCESS, LLC

Figure 2-3
Regal Fritillary
Potential & Previously
Recorded Habitat
Pike, Morgan and Scott
Counties, Illinois

Source: ESRI, ILDNR

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- **Step 2. Detailed Desktop Review**: GIS analysts and biologists worked closely together to determine which portions of the Project area provided potential habitat for the species within the buffered areas identified in Step 1. Potential regal fritillary butterfly habitat areas identified as part of this desktop review are shown on Figure 2-3.

  The desktop review consisted of the following:

  a. Reviewed aerial signatures of grasslands, prairie, wetland, and pastures that intersected the survey corridor.
  b. Spatially referenced each potential habitat area by mile post and tract ID.
  c. Summarized the dominant vegetative cover in each potential habitat area as grassland, wetland, or pasture.
  d. Assessed the extent of potential habitat patch size for each intersecting area in the DAPL Project corridor. Potential habitat areas with measured total patch sizes of 100 acres or larger were further considered as potential habitat. Total patches consist of adjacent grassland areas within the DAPL Project corridor. Patches were "lumped" according to adjacent land cover. Features such as roads, railroads, fencerows, and streams were disregarded.

- **Step 3. Habitat Assessment Surveys**: Biologists conducted field-based habitat assessment surveys in areas of potential habitat (where access was granted) identified in Step 2. Dominant vegetation and species were recorded at each potential habitat area mapped. Habitat assessment surveys recorded the presence or absence of required vegetation components for the regal fritillary butterfly, as follows:

  a. Biologists completed meander surveys of potential habitat areas within the DAPL Project corridor with the specific intent of locating and identifying suitable larval host plants (violets).
  b. If suitable larval host plants were found, biologists conducted meander surveys of potential habitat areas with the specific intent of locating and identifying nectar plants.
  c. Biologists characterized the plant community present and documented the presence and percent cover of nectar producing plant species according to Steps a and b, above.

Biologists conducted regal fritillary butterfly habitat surveys in Pike and Morgan counties (Figure 2-3), Illinois, on October 6 and 7 and November 18, 2014. Potential habitat sites east of the Illinois River generally consisted of tallgrass sand prairie, with representative plant species including big bluestem

(*Andropogon gerardii*), little bluestem (*Schizachyrium scoparium*), and eastern prickly pear (*Opuntia humifusa*). Shrubs were occasional, and included black jack oak (*Quercus marilandica*). One survey site occurring west of the Illinois River is situated on a maintained and presumably mowed levee.

In accordance with Step 3 above, biologists conducted meander surveys in an effort to identify suitable larval host species. Surveys for the suitable larval host species were conducted during the time of year when most of the violet species had probably stopped flowering. Biologists did not locate any of the larval host plants in the survey corridor or the adjacent area viewable from the survey corridor; as a result, the subsequent surveys for the adult nectar plants were not conducted. However, while surveying for violets, dry prairie with adult nectar plants such as milkweed and thistle was observed, indicating that suitable habitat for adults during their flight period does exist within and adjacent to the survey corridor (Figure 2-3). A portion of the corridor in Morgan County is located in an approximately 1-mile long stretch of prairie, a habitat used by the regal fritillary butterfly (Figure 2-3). It should be noted that this linear stretch is part of an approximately 400-acre area of prairie habitat surrounding the DAPL Project corridor.

Because surveys for larval host plants were conducted during a time of year when they would be difficult to detect, it is unknown if suitable larval habitat exists within the DAPL Project corridor. However, the proximity to known occurrences, presence of prairie habitat, and availability of adult nectar sources suggests that the regal fritillary butterfly may use these areas during their adult flight period.

2.3.4 Illinois Chorus Frog

The following outlines the known habitat needs (based on available literature), known locations in the DAPL Project area, and the habitat survey results for the Illinois chorus frog.

2.3.4.1 Habitat Requirements

Habitat condition, patch size, vegetation requirements, and basic life history contribute to the habitat requirements of the Illinois chorus frog, as follows:

- **Habitat Condition:** Illinois chorus frogs are closely associated with sandy substrates, and occur in sand prairie and other sandy habitats including flatwoods and wooded floodplains. They may also persist in cultivated fields (Green et al., 2013). Loose, sandy soils are an important habitat feature that facilitate digging and allow the frogs to construct their underground burrows. Warm season burrows have been measured at depths of up to 20 centimeters (cm) (Axtell and Haskell, 1977; Tucker et al., 1995). During winter, the frogs must burrow beneath the frost line (Packard et al., 1998), which may reach depths of 50 to 63 cm in this region of the State (Wendland, 1998).

In Illinois, breeding typically occurs in flooded depressions in fields, although ditches may also be used. Ephemeral wetlands appear favored over permanent habitats (Brown and Rose, 1988).

- **Patch Size**: The home range size of Illinois chorus frogs is not currently known (Shephard et al., 2005); however, Tucker (1998) found Illinois chorus frogs up to 0.9 kilometer (km) from their original point of capture, and this measurement is currently being used as a standard movement distance by the Illinois DNR (pers. comm. Jenny Skufka, 2014). Illinois chorus frogs use aquatic habitat during the spring breeding season and terrestrial habitat for the remainder of the year. Thus, both habitats should be considered when evaluating the spatial needs of individuals and populations.

- **Vegetation Requirements**: Burrows tend to be excavated in areas devoid of vegetation, and substrates with heavy vegetation and thick sod may not be suitable (Tucker et al., 1995).

- **Basic Life History:** Illinois chorus frogs are largely fossorial, spending much of their lives underground in self-dug burrows (Green et al., 2013). Burrow depths may reach 8 inches or more and have been found close (<3 meters for an adult male) to breeding wetlands (Tucker et al., 1995). Loose, sandy substrates facilitate digging and are a critical habitat feature for these frogs. Local populations appear to be small, with <10 males occurring at calling sites (Shepard et al., 2005). Breeding occurs from February to April in ephemeral depressions and ditches, especially after heavy rains. Eggs are attached to underwater twigs and branches, and tadpoles transform after approximately 2 months (Phillips et al., 1999).

  Illinois chorus frogs occupy areas of sandy habitat through most of the year, but also use wetlands for reproduction during late winter and spring. Thus, both habitat types need to be considered when avoiding impacts to the species. Illinois chorus frogs are fossorial (live underground) and are difficult to locate outside of the spring breeding season. However, they can be detected during the spring when males can be heard calling from breeding ponds. Male frogs emit a short whistle-like call that can be heard from more than 1.3 miles away during favorable weather conditions (Brown and Rose, 1988), allowing biologists to locate breeding sites.

2.3.4.2 Species Status in the Project Area

Illinois chorus frogs have a limited distribution and are restricted to areas along the Illinois and Mississippi Rivers in Illinois, Missouri, and Arkansas (Green et al., 2013). LeGesse (2013) reported finding Illinois chorus frogs at five breeding pools in areas northeast of the DAPL Project corridor, including one approximately 0.10 mile away. The Illinois Natural Heritage Database has several records

of this species within 0.25 mile of the DAPL project corridor in Morgan and Scott counties. Figure 2-4 shows known locations of the Illinois chorus frog.

2.3.4.3 GIS and Field Habitat Surveys

Both desktop GIS and field habitat surveys were conducted for the Illinois chorus frog, as follows:

- **Step 1. Preliminary Desktop Review**: GIS analysts conducted an initial screening of State-listed species resource records provided by IDNR for the DAPL Project on October 15, 2014. A 1-mile assessment buffer (measured from the edge of each mapped occurrence) was established around each known occurrence of Illinois chorus frog. Cardno then reviewed and summarized the extent of the 1-mile assessment buffer and corresponding occurrence records that intersected the survey corridor.

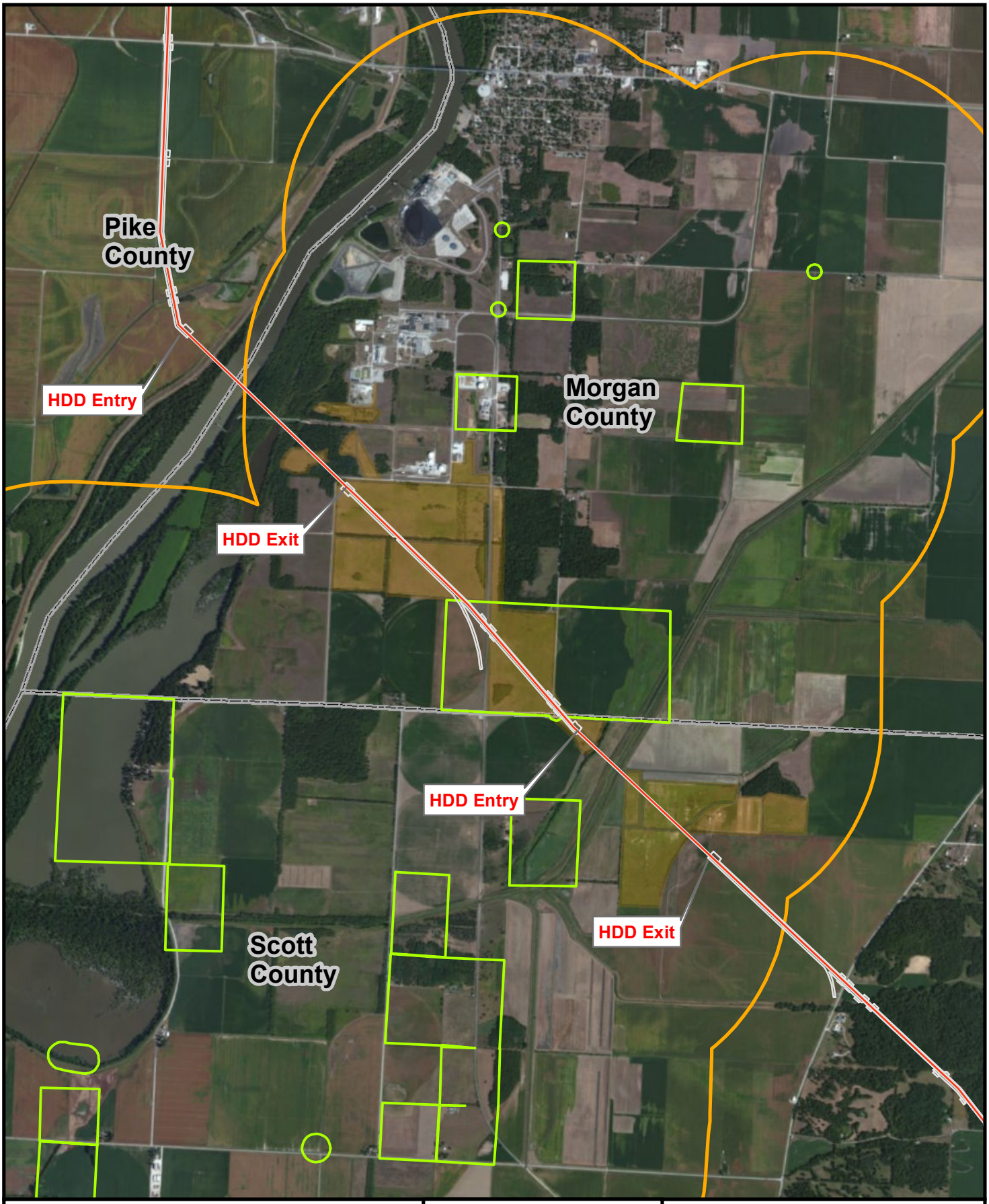
- **Step 2. Detailed Desktop Review**: GIS analysts and biologists worked closely together to determine which portions of the survey corridor provided potential habitat for the species. Potential habitat areas identified as part of this desktop review are shown on Figure 2-4. The desktop review consisted of the following:

    a. Determined the presence of sandy soils using appropriate GIS layers that intersected the survey corridor.
    b. Reviewed aerial signatures for the presence of grasslands, prairie, wetland, and pastures within areas mapped as containing sandy soils.
    c. Spatially referenced each potential habitat area by mile post and tract ID.
    d. Summarized the dominant vegetative cover in each potential habitat area as grassland, wetland, or pasture.
    e. Assessed the extent of potential habitat patch size was for each intersecting area in the DAPL Project corridor. Potential habitat areas with measured total patch sizes of 0.025 acre or larger (including habitat adjacent to the DAPL Project corridor) was further considered as potential habitat. The 0.025-acre patch size presents a conservative threshold that follows the home range size for the closely related ornate chorus frog, which has a home range size of approximately 0.025 acre (100 square meters) (Ashton and Ashton, 1988). This conservative home range size represents Illinois chorus frogs that may have home range sizes smaller than the 0.9-km measurement used by the INDR. Total patches consist of all habitats adjacent to the DAPL Project corridor. Patches were

"lumped" according to adjacent land cover. Features such as roads, railroads, fencerows, and streams were disregarded.

- **Step 3. Conduct Habitat Assessment Surveys:** Biologists conducted field-based habitat assessment surveys in areas of potential habitat (where access was granted) identified in Steps 1 and 2. Land use, habitat, and soil type were recorded at each potential habitat area mapped. Habitat assessment surveys recorded the presence or absence of required habitat components for the Illinois chorus frog as follows:

    a. Biologists conducted meander surveys of potential habitat areas (where access was granted) with the specific intent of locating and identifying areas of sandy soil. Biologists documented the presence or absence of sandy soils, as well as notes on the dominant vegetation in the survey area.
    b. While conducting soil type surveys, biologists conducted meander surveys identifying aquatic breeding habitat in the survey area.
    c. In situations where parcels were not accessible or the proposed route was changed after field surveys were completed, remote sensing via aerial photography was used to determine if sites held potential habitat or not. This final assessment step was performed by a qualified biologist who conducted in-field habitat assessments during Steps a and b. During this step, the biologists used information from previous surveys of the area and discernment of aerial images to determine if suitable, potential, or unsuitable habitat occurred at remaining sites. Sites with suitable or potentially suitable habitat are presented in Figure 2-4.



Proposed Pipeline
Workspace
Illinois Chorus Frog - Previously Recorded Habitat
Illinois Chorus Frog - Search Area
Illinois Chorus Frog - Potential Habitat

3,000 1,500 0 3,000
Scale in Feet

NORTH

DAKOTA ACCESS, LLC

Figure 2-4
Illinois Chorus Frog
Potential & Previously
Recorded Habitat
Morgan and Scott
Counties, Illinois

Source: ESRI, ILDNR

Issued: 4/24/2015

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Biologists conducted Illinois chorus frog habitat surveys in Morgan County, Illinois, on October 6 and 7 and November 18, 2014 (Figure 2-4). Sites generally consisted of tallgrass sand prairie, sometimes bordered by adjacent woodlots or shrubby areas. Representative plant species included big bluestem, little bluestem, and eastern prickly pear. Soils were sandy at all visited sites, as evidenced by the widespread occurrence of prickly pear cactus.

Areas east of the Illinois River that were visited contained sandy soil, and large portions of suitable terrestrial habitat were identified between Old Dump Road and Smith Lake Road in Morgan County (Figure 2-4). Two wetlands that could potentially serve as Illinois chorus frog breeding habitat were identified in the DAPL Project corridor.

Illinois chorus frogs occur in the sandy floodplain of the Illinois River, with most recorded occurrences in an area near the intersection of Cemetery and Smith Lake Roads south of Meredosia, Morgan County (Illinois Heritage Database, 2013; LeGesse, 2013). Terrestrial habitat for the Illinois chorus frog occurs for more than a mile along the DAPL Project corridor.

2.4 Project Effects

Potential effects to the covered species could result from construction of the proposed Project. Construction is scheduled to begin in December of 2015 and completed no later than November of 2016. Impacts to potential habitats would be temporary and the construction right-of-way would be restored to pre-construction conditions. A description of proposed activities and effects to each of the covered species is provided in the following sections.

2.4.1 Description of Project Activities

Within the Illinois River floodplain, the DAPL Project would be constructed using a combination of horizontal directional drill (HDD) technology and trenching techniques. The Illinois River and east levee would be crossed by HDD, thus avoid impacts to these features and any habitats located between HDD entry and exit points with the exception of trees required to be cleared within a 30-foot corridor over the pipeline between HDD entry and exit locations. Areas where the pipeline is to be installed by trenching would utilize a construction corridor of 125 feet. Upon completion of construction, the DAPL Project right-of-way would be restored to pre-construction conditions and allowed to return to original land uses and conditions; the only limitations being structures within the 50-foot permanent easement and selective tree clearing within 30 feet of the pipeline.

Construction sequencing would include the following activities:

Clearing and Grading - Prior to commencement of ground disturbing activities, a standard survey and stakeout would be conducted to identify ROW and workspace boundaries and to locate existing foreign utility lines within the construction ROW. Following the completion of the surveys, the construction ROW would be cleared of vegetation and debris. Within wetlands, stumps would be cut flush with the ground and left in place except where removal is necessary to facilitate the creation of a safe and level workspace. Cleared vegetation and debris along the ROW would be disposed of in accordance with Federal, State, and local regulations, either by burning, chipping and spreading, or transporting to a commercial disposal facility. Where necessary to contain disturbed soils during clearing and grading in upland areas and to minimize potential erosion and sedimentation of wetlands and waterbodies, temporary erosion control devices (ECDs) would be installed prior to initial ground disturbance and would be maintained throughout construction.

Trenching - Trenching involves excavation of a ditch for pipeline placement and is accomplished through the use of a trenching machine, backhoe, or similar equipment. Trench spoil would be deposited adjacent to each trench within the construction work areas, with topsoil segregation utilized where necessary based on land use. In standard conditions, the trench would be excavated to a depth of approximately 8 feet to allow for a minimum of 3 feet of cover over the pipe, as required by 49 CFR Part 195 and Dakota Access's landowner commitments. Typically, the bottom of the trench would be cut at least 12 inches greater than the width of the pipe. The width at the top of the trench would vary to allow the side slopes to be adapted to local conditions at the time of construction.

Pipe Stringing, Bending, and Welding - Following preparation of the trench, the new pipe would be strung and distributed along the ROW parallel to the trench. Depending on available workspace, some pipe may be fabricated offsite and transported to the ROW in differing lengths or configurations. Pipe would be bent by hydraulic bending machines, as necessary, to conform the pipe to the trench. Once in place along the ROW, pipe lengths would be aligned, bends fabricated, and joints welded together. Welding would be performed in accordance with the American Petroleum Institute Standards and DOT-Pipeline and Hazardous Materials Safety Administration (PHMSA) pipeline safety regulations, and company welding specifications. All welds would be coated for corrosion protection and visually and radiographically inspected to verify there are no defects. Additionally, the entire pipeline would be visually inspected prior to lowering-in.

Pipeline Installation and Trench Backfilling - Completed sections of pipe would be lifted off temporary supports by side boom tractors or similar equipment, and placed into the trench. Prior to lowering-in, the trench would be visually inspected to verify that it is free of rock and other debris that could damage the pipe or the coating. Additionally, the pipe and the trench would be inspected to verify that the configurations are compatible. Tie-in welding and pipeline coating would occur within the trench to join the newly lowered-in section with the previously installed sections of pipe. Following this activity, the trench would be backfilled with the previously excavated material and crowned to approximately 6 inches above its original elevation to compensate for subsequent settling.

2.4.2 Potential Effects to Regal Fritillary Butterfly

Based on habitat assessments for the regal fritillary butterfly the proposed Project would cross approximately 6,740 feet of suitable habitat. Approximately 670 feet would be avoided through the implementation of HDD technology to cross the Illinois River. Approximately 6,070 feet would be crossed by trenching using traditional construction techniques and at HDD entry/exit locations. Based on workspace configuration this would result in total temporary impacts to approximately 15.6 acres of suitable habitat for the regal fritillary butterfly.

2.4.3 Potential Effects to Illinois Chorus Frog

Based on habitat assessments for the Illinois chorus the proposed Project would cross approximately 9,760 feet of suitable habitat. Approximately 3,000 feet would be avoided through the implementation of HDD technology to cross the Illinois River and east levee. Approximately 6,760 feet would be crossed by trenching using traditional construction techniques and at HDD entry/exit locations. Based on workspace configuration this would result in total temporary impacts to approximately 18.5 acres of suitable habitat for the Illinois chorus frog.

2.5 Measures to Minimize and Mitigate Impacts to Protected Species

Dakota Access would construct the proposed DAPL project in compliance with state and Federal regulations and would implement appropriate Best Management Practices (BMPs) throughout construction and restoration of the right-of-way. Dakota Access has designed the proposed Project to utilize the minimum amount of workspace to safely and efficiently install a pipeline of this diameter. As previously outlined, the project would avoid approximately 670 feet of potential habitat for the regal fritillary butterfly and approximately 2,975 feet of potential habitat for the Illinois chorus frog through the implementation of HDDs to install the proposed pipeline under the Illinois River and the east levee. In areas where the proposed pipeline would be installed using open trenching construction techniques, workspaces have been designed to utilize the minimum amount of space necessary. Because adverse

effects to protected species may be unavoidable at locations with potential habitat, Dakota Access has developed the following general and species-specific measures to minimize and mitigate potential impacts to the regal fritillary butterfly and Illinois chorus frog.

2.5.1 General Measures

In order to minimize potential effects to these State-listed species, the following actions are proposed:

- Environmental Inspection staff would oversee and implement this Conservation Plan during construction of the DAPL Project.
- Provide environmental training for construction crews that would include information about where these two state-listed species may be encountered and how to identify them. Create a handout that construction crews can reference in the field. Any sightings by construction crews would be reported to the Environmental Inspector.
- Clearly mark access points to the construction right-of-way to avoid any potential off-site disturbances.
- Prior to construction the workspaces would be staked to mark the limits of areas authorized for construction.
- Temporary BMPs would be utilized to minimize potential offsite erosion and sedimentation.
- Temporary storage facilities for petroleum products, other fuels, and chemicals shall be located outside of potential habitats for protected species and stored within containment to prevent accidental spills. In the event of an accidental spill, Dakota Access would follow established reporting procedures, including notification to the IDNR.
- Topsoil segregation within habitat areas to further enable successful revegetation following construction.
- Reseed the construction right-of-way with a native seed mix as recommended by the Natural Resources Conservation Service, or landowner-specific requirement.
- Establish protocols for contacting IDNR when either of these State-listed species is seen in the DAPL Project corridor.

2.5.2 Measures for the Regal Fritillary Butterfly

Dakota Access would further minimize potential impacts to the regal fritillary butterfly by implementing the following action:

- If construction occurs during the flight period (June – August) a pre-work sweep of the area would be conducted to look for any regal fritillary butterflies on the construction right-of-way. If

present a crew would walk the area in an attempt to flush the species from the construction corridor to adjacent habitats.

2.5.3 Measures for the Illinois Chorus Frog

Dakota Access would further minimize potential impacts to the Illinois chorus frog by implementing the following actions:

- Construction workspaces adjacent to potential breeding habitats would be separated by exclusion barriers constructed of erosion control fencing to keep frogs from entering the construction right-of-way. Fencing would be monitored by Environmental Inspection staff and any frogs found along the fences attempting to cross the project area would be relocated to undisturbed adjacent habitat.

2.5.4 Monitoring

Following construction the Project right-of-way would be restored to pre-construction elevations and contours. Segregated topsoils would be spread back over the construction right-of-way and seeded using a native seed mix in non-agricultural areas. Dakota Access's environmental inspection staff would monitor right-of-way restoration in compliance with state and Federal authorizations necessary to construct the pipeline in addition to landowner-specific commitments. Once the area achieves successful revegetation, any remaining temporary BMPs would be removed and restoration would be considered complete.

2.5.5 Adaptive Management Practices

Adaptive management practices would be used to respond to unforeseen circumstances that affect the effectiveness of measures used to minimize and mitigate potential effects of the proposed Project to protected species. DAPL proposes the following Adaptive Management Practices:

- Environmental Inspectors would assess active project work locations daily within potential habitats for the Illinois chorus frog and regal fritillary butterfly. If sightings of either species indicate a level of occurrence greater than anticipated in the Conservation Plan a coordination call with the INDR would be immediately scheduled to discuss the effectiveness of BMPs and possible additional measures.

- Daily tailgate meetings with construction contractors actively working within these protected species habitats would include a brief discussion on any modifications that could be necessary for construction practices or BMPs while constructing the pipeline through these areas.

- Qualified biological contractors would remain under contract in the event that species surveys become necessary to quantify populations of either species encountered during construction.

- Weekly conference calls would be held with DAPL's Environmental Director and Project Manager to discuss construction progress through protected species habitats, the effectiveness of BMPs, and any modifications that may be necessary to better protect these sensitive habitats during construction.

- Pre-construction site photographs of potential habitat areas would be collected to document a baseline of habitat conditions. This information would be used for comparison during post-construction monitoring to determine when restoration is complete.

2.5.6 Conservation Plan Funding

Dakota Access is a subsidiary to Energy Transfer Partners, L. P., a Texas-based company that began in 1995 as a small intrastate natural gas pipeline operator and is now one of the largest and most diversified investment grade master limited partnerships in the United States. Growing from roughly 200 miles of natural gas pipelines in 2002 to approximately 71,000 miles of natural gas, natural gas liquids, refined products, and crude oil pipelines today, the Energy Transfer family of partnerships remains dedicated to providing exceptional service to its customers and attractive returns to its investors. As such, Dakota Access has adequate financial backing to support and implement this Conservation Plan and the costs would be incorporated into the overall DAPL Project budget. Therefore, no specific financial instruments such as bonds, certificates of insurance, or escrow accounts would be required to implement this plan.

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3.0 PROJECT ALTERNATIVES

3.1 No-Action Alternative

The no-action alternative for this project would be not to construct the pipeline. In this case, the purpose and need for the DAPL Project to "move an economical, abundant, reliable, and domestic supply of crude oil from the Bakken and Three Forks production region in North Dakota to a crude oil market hub located near Patoka, Illinois" would not be met. Thus this alternative is not suitable.

3.2 Alternative Pipeline Layout

Dakota Access performed a thorough routing analysis incorporating greater than 50 data sets in an effort to avoid and minimize potential impacts to sensitive resources resulting from the DAPL Project. Following this initial effort, the route was further refined to avoid and minimize crossing regulated features based on aerial interpretation and flight reconnaissance. Additionally, as field surveys were performed, additional minor route deviations were incorporated to increase avoidance and minimization of impacts. Because the protected species are known to occur along the Illinois River floodplain, practicable route alternatives are not available that would completely avoid potential impacts to habitats for these species. Dakota Access has selected the alignment that provides the least impact to variety of sensitive resources and constraints.

4.0 ASSESSMENT OF TAKE

4.1 Regal Fritillary Butterfly

Temporary impacts to regal fritillary butterfly habitat at the proposed work site are not expected to have long term impacts to the ecosystem or to the species locally or in the State of Illinois. Suitable habitat located outside of the proposed work area can provide refuge for transient individuals. Large regal fritillary populations are known from offsite localities in the Illinois River valley near Beardstown and Arenzville in Cass and Morgan Counties (Humphreys, 2014). Additionally, LeGesse (2013) conducted regal fritillary butterfly surveys at sites within 2 miles of the DAPL Project area, and observed larval host plants at multiple locations, including 14 large populations (>1,000 square meters each). However, LeGesse also observed what appeared to be a temporary extirpation of the species from the area in 2012 when an extreme drought caused local regal fritillary butterflies to migrate out of the area. He expected populations to recover over time, but according to his estimate, the species currently may not occur in the area, or it may occur in low densities.

Construction of the DAPL Project could result in the estimated potential take of one to ten individual regal fritillary butterflies. This estimate is based on data collected by LeGesse (2013) who conducted regal fritillary butterfly surveys at sites within 2 miles of the DAPL Project corridor in Morgan County. LeGesse identified 57 regal fritillary butterflies on four survey transects totaling 23 acres, with an overall density estimate of 2.4 butterflies per acre. LeGesse conducted census surveys in areas containing the larval host violet species, where regal fritillary butterflies might be observed, and he sampled each site 15 times between May and September 2012. Humphreys (2014) estimated that between 1 and 30 regal fritillary butterflies could be impacted during proposed disturbances to LeGesse's sampling sites, although the number was expected to be on the low end.

This project is expected to temporarily impact 15. 6 acres of adult regal fritillary habitat, compared to LeGesse's 23 acres. However, unlike LeGesse's (2013) survey sites, the larval host violet species was not identified within the project corridor during 2014 field investigations. Furthermore, because the 2012 drought reduced or possibly even eliminated regal fritillary butterflies from the area, the estimated impacts of the proposed work on this site potentially would be considerably lower than those estimated at the LeGesse (2013) sites. As such, an estimated one to ten individual regal fritillary butterflies could be impacted by the proposed Project activities.

4.2 Illinois Chorus Frog

Given the occurrence of the Illinois chorus frog in the vicinity of the DAPL Project area, it is likely that, if present, the frog could be affected by project activities. If ephemeral breeding habitats are not occupied by the Illinois chorus frog within the DAPL Project corridor, potential impacts would primarily affect individuals burrowed beneath the ground or those that are briefly active on the surface. Based on available information and field investigations, DAPL has estimated that approximately 18. 5 acres of potential habitat for the Illinois chorus frog would be impacted during construction of the proposed Project.

Breeding choruses often consist of <10 males at a site (Shepard et al., 2005), and if a 1:1 sex ratio is assumed, local populations would likely be fewer than 20 adult frogs per breeding wetland. The IDNR uses a 0.9-km buffer for Illinois chorus frog habitat surrounding a breeding site based on the work of Tucker (1998). Using the above metrics, a breeding wetland 100 meters in diameter would require 698.3 acres of protection. The density of adult frogs at this site would be about 0.03 frog per acre, or approximately 1 frog per 40 acres. The proposed work is projected to impact approximately 18.5 acres of suitable or potential habitat, which represents a small percentage of habitat with the 0.9-km buffer area around any given potential breeding site.

Impacts would depend on local climate conditions and time of year, and could be higher if construction activities are conducted when frogs are migrating to or from breeding sites (February to April), juveniles are metamorphosing and dispersing from wetlands (about 2 months after breeding), or if construction occurs in an area where two or more breeding wetlands are closer than 1.8 km from each other and have overlapping habitat buffer zones (Phillips et al., 1999). Given the available information, it is estimated that between 1 and 10 Illinois chorus frogs could be impacted by the proposed Project activities.

5.0 IMPLEMENTING AGREEMENT

Dakota Access agrees to implement this Conservation Plan upon approval by IDNR and issuance of the requested ITA. Dakota Access would be solely responsible for meeting the terms and conditions of the ITA and would allocate sufficient personnel and resources for effective implementation of the Conservation Plan. Dakota Access would be responsible for planning, contract execution, and construction supervision for the entire DAPL Project.

5.1 Responsibilities and Schedules

Monica Howard of Dakota Access would serve as the Conservation Plan Coordinator and would be responsible for the implementation of the best management practices, mitigation measures, and restoration activities as described in this Conservation Plan. Jenny Skufca would be the IDNR liaison and would inform IDNR of adaptive management measures necessary to comply with the Conservation Plan. A post-construction monitoring report would be provided to the INDR upon completion of restoration activities. The report would include a description of when the project activities were completed, BMPs that were implemented, pre- and post-construction photographs of habitat areas, an inventory of any of the protected species observed during construction activities, and any additional measures taken to further reduce potential impacts to these species. Contact information for the Conservation Plan Coordinator is as follows:

Monica Howard
Environmental Director
Dakota Access Pipeline, LLC
1300 Main Street
Houston, TX 77002
monica.howard@energytransfer.com
(713) 989-7186

Dakota Access proposes to initiate construction on the proposed Project in December of 2015. Initial construction activities would likely be limited to installation of pipeline segments by HDD, including the Illinois River and east levee, within the area addressed in this plan. Mainline pipeline construction is expected be initiated during the first quarter of 2016 and construction is anticipated to be completed by November 2016. In-service is scheduled for December 2016.

5.2 Certification

I hereby certify that the Conservation Plan Coordinator has the legal authority to carry out their respective obligations and responsibilities under the Conservation Plan.

_____ _____

Signatory of Dakota Access DATE

5.3 Compliance with Federal, State, and Local Regulations

Dakota Access will comply with all pertinent Federal, State, and local regulations that govern the proposed DAPL Project and will provide copies of Federal authorizations that could affect the terms and conditions of any incidental take permit authorized by the IDNR for this Project.

6.0 LITERATURE CITED

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APPENDIX A - AGENCY CORRESPONDENCE

Illinois Department of
Natural Resources
One Natural Resources Way Springfield, Illinois 62702-1271
http://dnr.state.il.us

Pat Quinn, Governor
Marc Miller, Director

January 9, 2015

Ms. Marcy Knysz
Cardno JFNew
1000 Hart Road
Suite 130
Barrington, Illinois 60010

RE: Dakota Access Pipeline Project
Energy Transfer, Houston, TX
IDNR Project # 1504882

Dear Ms. Knysz:

This letter concerns the Endangered Species Consultation for the construction of the Dakota Access Pipeline by Energy Transfer. The Illinois segment is comprised of 210 miles of new 30 inch pipeline running from Nauvoo to Patoka through Hancock, Adams, Schuyler, Brown, Pike, Morgan, Scott, Macoupin, Bond, Fayette, and Marion Counties. This project was submitted for consultation in accordance with the *Illinois Endangered Species Protection Act* [520 ILCS 10/11], the *Illinois Natural Areas Preservation Act* [525 ILCS 30/17], and Title 17 *Illinois Administrative Code* Part 1075.

The Illinois Department of Natural Resources has reviewed the proposed project and offers the following comments:

Energy Transfer has indicated the Mississippi, Illinois, Kaskaskia Rivers, and their larger tributaries will be crossed using Horizontal Directional Drilling (HDD). This construction method will avoid or minimize any adverse impact to the high quality aquatic habitat known to be present at these locations. The Department concurs with the use of HDD and requests that Energy Transfer contact the Department if any other method is selected to transition these rivers.

The Mt. Moriah Geological Area, an Illinois Natural Areas Inventory site is located within the proposed project corridor west of Mile Post (MP) 815 on the east bank of the Mississippi River. It is recommended that no surface disturbance occur within this area and that HDD be used to avoid any adverse impact to this feature.

The Elvaston Railroad Prairie, an Illinois Natural Areas Inventory site is located between MP 822 and MP 823. It is recommended that no surface disturbance occur within this area and that HDD be used to avoid any adverse impact to this feature.

The project corridor includes upland and bottomland forest habitat that likely supports the state- and federally-listed endangered **Indiana bat**, (*Myotis sodalis*) and the northern long-eared bat (*Myotis septrentrionalis*). The **northern long-eared bat** has been approved for listing as state threatened by the Illinois Endangered Species Protection Board pending publication in the Illinois Register.

Construction of the pipeline will result in the fragmentation and permanent removal of forest habitat. The bats use trees as roosts and nurseries during the spring, summer, and fall. If bats are using trees that are trimmed or removed, it is likely they will be killed or injured. This will be considered a take, and is a violation of the Illinois Endangered Species Protection Act. "Take" means, in reference to animals and animal products, to harm, hunt, shoot, pursue, lure, wound, kill, destroy, harass, gig, spear, ensnare, trap, capture, collect, or attempt to engage in such conduct.

The Department recommends that no trees should be trimmed, felled or removed except between the dates of October 15 and the subsequent March 31. If trees must be removed between April 1 and October 14, they should first be surveyed by a qualified biologist for use by these bats. If bats are present, work should not begin until October 15, or it is recommended that Energy Transfer apply for an Incidental Take Authorization (ITA) for each of these species in accordance with *17 Ill Adm. Code Part 1080.*

The state threatened **Illinois chorus frog** (*Pseudacris streckeri*) and the state threatened **regal fritillary** (*Speyeria idalia*) are known to occur within the project corridor between MP 878.5 and MP 882. Construction methods that disturb the surface of the ground would likely result in a take of these species and is a violation of the Illinois Endangered Species Protection Act. 'Take" means, in reference to animals and animal products, to harm, hunt, shoot, pursue, lure, wound, kill, destroy, harass, gig, spear, ensnare, trap, capture, collect, or to attempt to engage in such conduct. It is recommended that Energy Transfer apply for an ITA for each of these species in accordance with *17 Ill Adm. Code Part 1080.*

Communication concerning the ITA application process should be directed to Jenny Skufca, Office of Resource Conservation, 217-557-8243 or Jenny.Skufca@illinois.gov.

The Gillespie Prairie Land and Water Reserve (L&WR) is within the pipeline corridor between MP 943 and MP 944. The L&WR is owned by the Illinois Department of Natural Resources and managed by the Illinois Nature Preserves Commission under the authority of the *Illinois Natural Areas Preservation Act* [525 ILCS 30/17]. Energy Transfer has stated that no surface disturbance will occur within the L&WR and that HDD will be used to install the pipeline. The Department concurs with the use of this method to cross the L&WR. Execution of a license agreement between Energy Transfer and the Department's Office of Realty and Environmental Planning will be required prior to the pipeline's construction.

Communication concerning the L&WR should be directed to Valerie Njapa, Illinois Nature Preserves Commission, 217-782-0953 or Valerie.Njapa@illinois.gov.

Consultation on the part of the Department is completed. This consultation is valid for two years unless new information becomes available that was not previously considered; the proposed action is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the project has not been implemented within two years of the date of this letter, or any of the above listed conditions develop, a new consultation is necessary.

If additional protected resources are encountered during the project's implementation, you must comply with the applicable statutes and regulations. Also, note that termination does not imply IDNR's authorization or endorsement of the proposed action.

Please contact me if you have questions.

Sincerely,

Patrick A. Malone
Impact Assessment Section
Phone (217) 785-5500
pat.malone@illinois.gov

cc: Jenny Skufca, Office of Resource Conservation, IDNR
Valerie Njapa, Illinois Nature Preserves Commission