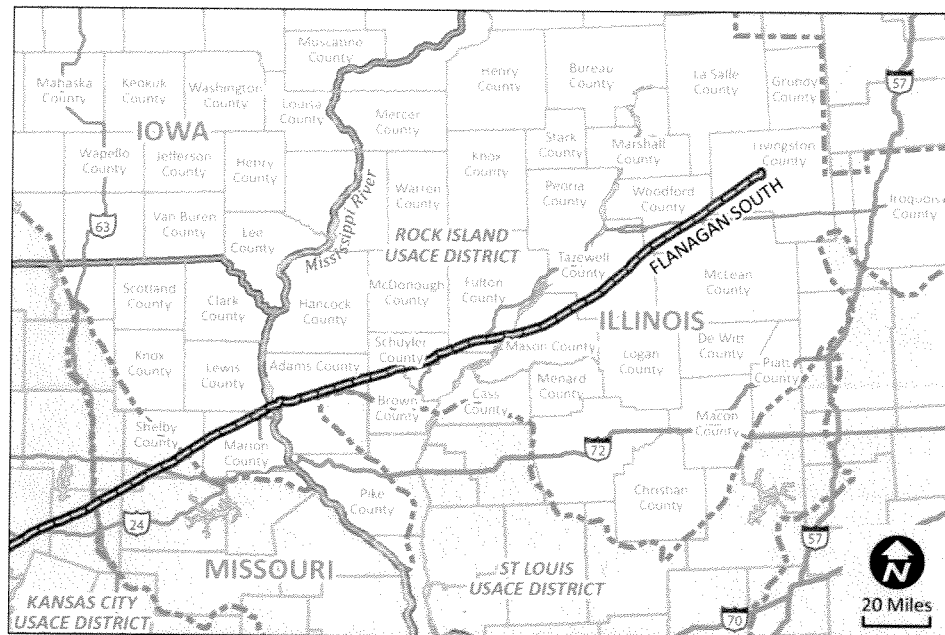


# FLANAGAN SOUTH PROJECT

## HABITAT CONSERVATION PLANS AND INCIDENTAL TAKE AUTHORIZATION – STATE OF ILLINOIS

CONTAINS PRIVILEGED AND CONFIDENTIAL INFORMATION – DO NOT RELEASE



 **ENBRIDGE**  
**Enbridge Pipelines (FSP) L.L.C.**  
4628 Mike Colalillo Drive  
Duluth, MN 55807

Date: December 12, 2012

**URS**

URS Project No. 31811100

**THIS DOCUMENT IS AVAILABLE FOR PUBLIC REIVEW JANUARY 9, 2013 THROUGH FEBRUARY 22, 2013 IN ACCORDANCE WITH THE PUBLIC NOTICE (BELOW) PUBLISHED IN THE MASON COUNTY DEMOCRAT (HAVANA, ILLINOIS) AND THE BREEZE COURIER (TAYLORVILLE, IL)**

**Flanagan FSP Project - IL HCP ITA  
Public Notice**

In accordance with 17 Ill. Administrative Code 1080, this public notice announces that Enbridge Pipelines (FSP) L.L.C., 4628 Mike Colallilo Drive, Duluth, MN 55807, will pursue construction of a 36-inch diameter crude oil pipeline beginning near Pontiac, Illinois, and ending near Cushing, Oklahoma (Project). Enbridge has applied for Threatened and Endangered Species Incidental Take Permit for three species (Yellow-headed Blackbird, King Rail, and Illinois Chorus Frog) from the Illinois Department of Natural Resources to allow for construction of the pipeline for that portion of the Project located within the Mason County Sands area in the vicinity of Sand Lake. The Project limits within the Sand Lake area include the approximate 135-foot-wide construction right-of-way (CROW), which has been reduced to 110-feet where the proposed pipeline crosses approximately 1,900 feet of the Sand Lake Natural Area.

The Yellow-headed Blackbird is an Illinois endangered species found generally in northern Illinois where it is at the eastern limit of its range. They are migratory birds that are only found nesting above water deeper than one meter.

The King Rail is an Illinois endangered species found generally in Brown, Fulton and Mason Counties of central Illinois. They are migratory birds that forage near shallow water but nest above slightly deeper waters with emergent vegetation.

The Illinois Chorus Frog is a threatened species in Illinois that is restricted to areas of sandy substrates found in the floodplains of the Mississippi and Illinois rivers in Illinois. The chorus frog is the earliest of the Illinois frogs to begin breeding and the adults stay in their burrows when not breeding.

Pipeline construction will require temporary clearing and grading of the CROW, trenching and installation of the pipeline, and restoration and cleanup of the CROW, which may result in taking of the three identified species if local environmental conditions are favorable for these species at the time of construction. To mitigate these impacts, Enbridge proposes to avoid impacts by reducing construction widths.

A conservation plan has been developed in accordance with Ill. Administrative Code 1080.10 for these mitigation efforts and can be reviewed at the following locations:

Havana Public Library District 201 West Adams Street Havana, IL 62644-1321	Illinois Department of Natural Resources Office of Resource Conservation Illinois State Fairgrounds One Natural Resource Way Springfield, IL 62702-1272
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The public comment period closes thirty (30) days after the last publication of the Public Notice that first appeared in both the Mason County Democrat and The Breeze Courier on January 9, 2013. Therefore, the comment period will be closed on February 22, 2013.

Written comments regarding the conservation plan should be submitted to the address and/or email below:

Illinois Department of Natural Resources  
Office of Resource Conservation  
Attn: Endangered Species Manager  
One Natural Resources Way  
Springfield, IL 62702-1271  
[Joe.Kath@illinois.gov](mailto:Joe.Kath@illinois.gov)

**Construction And Operation Activities of the Flanagan South Project by Enbridge Pipelines (FSP) L.L.C. to the Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*), King Rail (*Rallus elegans*) and Illinois Chorus Frog (*Pseudacris streckeri illinoensis*)**

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### I. Description of the project and its impact likely to result from the proposed taking of the identified species

Enbridge Pipelines (FSP) L.L.C., an indirect U.S. subsidiary of Enbridge Inc., is proposing the construction of a new liquid petroleum pipeline in the States of Illinois, Missouri, Kansas and Oklahoma. The Flanagan South Project (Project) is approximately 589 miles long. Affiliate Enbridge Energy, Limited Partnership (Enbridge entities will be collectively referred to as “Enbridge”) owns the U.S. portion of the world’s longest liquid petroleum pipeline system. Combined with the Canadian portion of the pipeline system, the operationally-integrated pipeline spans approximately 3,200 miles across North America, portions of which have been in operation since 1950. Enbridge’s pipeline system transports crude petroleum to serve refineries in Midwestern states and eastern Canada. Enbridge also transports volumes of crude oil from North Dakota and Montana through an interconnection with Enbridge-affiliated pipelines in North Dakota, and from the Gulf of Mexico coast via interconnections with other pipeline systems.

The Project is an independent project that begins at Enbridge’s Flanagan Terminal and terminates at Enbridge’s Cushing Terminal. The Project increases the crude petroleum transportation capacity from the growing crude oil supply from the Western Canadian Sedimentary Basin and the growing Williston Basin in North Dakota to refineries in the Midwest and the U.S. Gulf Coast, via interconnections at Cushing, Oklahoma. The Project is co-locating or “twinning” Enbridge’s Spearhead Pipeline, running parallel to and where possible, using the existing rights-of-way (ROW) of the Spearhead Pipeline. The Project will also include three pump stations in Illinois (but not near the Sand Lake area) which will be adjacent to existing facilities to the maximum extent practicable. Construction of pump stations is anticipated to commence in May of 2013 and construction of mainline pipeline commencing in August 2013, with an in-service date of mid-2014.

**Figure 1** shows the entire Project route location, the states that are crossed and United States Army Corps of Engineers (USACE) districts that are crossed. The Project route starts at the Flanagan Terminal located north of the City of Pontiac in Livingston County, Illinois, and crosses portions of Illinois, Missouri, Kansas and Oklahoma. Counties crossed in Illinois include Livingston, Woodford, Tazewell, Mason, Fulton, Schuyler, Brown and Adams. The route also crosses Havana, Illinois. The Project terminates at the Enbridge Cushing, Oklahoma, Terminal.

The Project area is mostly rural with agriculture as the primary land use; residential development is limited. Higher density population areas such as Quincy, Illinois have been avoided during strategic route alternatives review. Commercial and industrial land uses are limited to aboveground facilities to support energy infrastructure.

The Project route extends west-southwest across Illinois, from the MP 0 in Livingston County, Illinois to the Mississippi River at approximately MP 167.8. Enbridge has existing ROW along portions of the majority of the Project route because of its ownership of the Spearhead Pipeline system and will use that ROW as necessary to build and operate the Project. Although some of the Spearhead ROW lacks a defined width, where defined it is generally fifty (50) to eighty (80) feet in width.

### II. Conservation Plan Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*)

**II.A.1. Legal description, if available, or detailed description of the area to be affected by the proposed action:** Figure 2 indicates via hatching the mapped species buffer polygon for the Yellow-headed Blackbird that is included within the construction ROW for the current Project alignment. This 0.48-acre overlap of mapped species buffer polygon for the Yellow-headed Blackbird with construction ROW occurs on the following parcel:

Enbridge GIS Parcel No.: IL-MA-0590.000;  
Mason County Assessor PIN: 10-08-300-001-0021  
Mason County Assessor Parcel No.: 454000.000000  
Owner Name: S & D FARMS, INC.  
Legal Description: PT NW1/4 SW1/4 8 21 8 126  
Parcel size: 41.49 acres  
Township No.: 5; Township Name: Havana

**II.A.2. Biological data on Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*):** In Illinois, where it is at the eastern limit of its range, the Yellow-headed Blackbird has probably always been restricted to the prairie regions in the northern part of the state, where it was once a locally abundant breeding bird. The Illinois population is separated from the core of the Yellow-headed Blackbird population in western Iowa by about 420 miles (680 km). The Illinois population is small, declining, and isolated from the main North American breeding range for this species. It is an Illinois endangered species known from one 1994 occurrence in Mason County (Nyboer, R.W., J.R. Herkert and J.E. Ebinger. 2006. Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 – Animals).

The Yellow-headed Blackbird is a medium-sized, brilliantly colored blackbird. Adults have a pointed bill. The adult male is mainly black with a yellow head and breast; they have a white wing patch sometimes only visible in flight. The adult female is mainly brown with a dull yellow throat and breast. Both genders resemble the respective genders of the smaller Yellow-hooded Blackbird of South America. Total length is 9.5 inches, wingspan is 15 inches and weight is 2.3 ounces.

The Yellow-headed Blackbird only nests at sites where the water level is on average deeper than one meter. The wetland must have a mixture of open water and vegetation (usually cattails) that is referred to as a hemi-marsh. The nest is built with and attached to marsh vegetation. They nest in colonies, often sharing their habitat closely with the red-winged blackbird (*Agelaius phoeniceus*). During the breeding and nesting season the males are very territorial and spend much of their time perched on reed stalks and displaying or chasing off intruders.

The Yellow-headed Blackbird is territorial during the breeding season. The size of the male's territory is indirectly proportional to the quality of the marsh habitat. A positive correlation exists between the surface area of marsh and territory size as well as between the surface area of the marsh and the number of fledglings per adult. The Yellow-headed Blackbirds flock with other blackbirds during the non-breeding periods, feeding on grain and insects. The Yellow-headed Blackbird is a polygamous species that breeds in colonies. The males arrive at the marsh nesting area and establish territories before the females arrive. When the females arrive at the nesting area (late March to early May), one to five females build a nest, a basket woven around

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Project construction to minimize the environmental impacts of these activities (see **Attachment A**). The EMP is intended to meet or exceed applicable federal, state, and local environmental protection and erosion control specifications and practices, is designed to address typical circumstances, and may be amended by Enbridge as necessary to address site-specific conditions. Specific activities that may affect habitat for the Yellow Headed Blackbird are described along with minimization procedures below.

### ***Clearing***

Low ground pressure equipment will be used, as practical to limit disturbance to the wetland. When clearing in wetlands, the following restrictions will apply:

- Staging areas, additional spoil storage areas, and other additional work areas (outside of the temporary workspace (TWS) adjacent to the pipeline easement) will be located in upland areas at least 50 feet away from wetland boundaries. If topographic conditions do not permit a 50-foot setback, then these areas will be located as far away from the wetland as is practicable. Vegetation will not be cleared between these areas and the wetland. This requirement will not apply where a wetland occurs within the extra workspace for a stream crossing;
- The size of the additional workspace areas will be limited to the minimum needed to construct the wetland or waterbody crossing; and,
- Vegetation and trees within wetlands will be cut off at ground level, leaving existing root systems intact; clearing debris will generally be chipped/mulched, burned or removed from the wetland for disposal. Chips, hydro-axe debris, or similar material may be left in the wetland if spread evenly on the ROW, in a manner which will allow for normal revegetation as allowed by permits.

### ***Sedimentation Control Practices***

Silt fence and other erosion control methods will be installed and maintained in proper working order to prevent the flow of sediment into wetlands and waterbodies from spoil piles or sloped approaches that are adjacent to wetlands and waterbodies. When the depth of sediment reaches one-third of the height of a sediment barrier, the barrier will be replaced and/or the sediment removed. Non-functional sediment-control measures will be repaired, replaced, or supplemented with functional features as soon as possible.

### ***Right-of-Way Stabilization***

Tree stumps, brush riprap, imported dirt, and rock fill will not be brought in to stabilize the ROW in wetlands. Where a wetland cannot support construction equipment, and low ground-weight equipment is not used, construction activities will be accomplished from timber construction mats. Subsoil from the pipeline trench within the immediate wetland may be placed on top of equipment mats for additional stabilization. Timber mats are preferred materials that can be brought into a wetland and placed on the working side of the construction ROW. Timber mats may be placed over the ditch line to facilitate trench excavation. All timber mats will be removed during cleanup of wetlands.

### ***Trenching***

Excavation of the pipeline trench in wetlands typically will be accomplished using backhoe excavators. The duration of open trench will be minimized to the extent possible.

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Under normal circumstances, Enbridge plans to use a 135-foot-wide construction ROW to fabricate and install the pipeline. In heavily forested uplands, waterways, and emergent wetlands, the construction ROW, will be reduced to 110 feet. The ROW would be further reduced to 85 feet in forested and scrub/shrub wetlands, as well as the habitat of Sand Lake, and in waterways adjacent to these features. Following construction, an area measuring 50 feet in width will be maintained for operation of the pipeline.

**II.B.3. Plans for management of the area affected by the proposed action that will enable continued use of the area by the species:** Saturated wetlands have water to the ground surface or contain standing water. Unsaturated wetlands have the free water surface at some depth below the soil surface. Since Sand Lake is considered an intermittent lake, existing about half the time during the growing seasons over the last several decades, the saturation status of the wetland during Project construction is unknown at this time; however, unsaturated conditions are expected to be more prevalent late fall and winter during planned clearing and construction activity.

As indicated in Enbridge's EMP (**Attachment A, Section 3.6.1**) up to one foot of topsoil in unsaturated wetlands will be stripped, stored separately on the ROW, and subsequently restored to the locations from which it was removed. Similarly, topsoil stripping separate segregation, and restoration to the soil surface will be attempted, as practicable, in saturated wetlands. The stripping, separate segregation, and replacement of topsoil in wetlands will facilitate the rapid, natural regeneration of wetland vegetation from the seed bank.

Should an unsaturated condition be found, the wetland habitat will be seeded with the mix in **Table II-1** to provide temporary cover while the wetlands revegetate naturally. The natural revegetation process will be encouraged by the seeds and rhizomes in the topsoil spread back over the ROW after pipe installation. No fertilizer, lime, or mulch will be applied in wetlands.

**Table II-1- Unsaturated Wetland Seed Mix – General Restoration Mix**

<b>Seed Name</b>	<b>Pure Live Seed (Pounds Per Acre)</b>	<b>Percent (%) of Seed</b>
American Slough Grass ( <i>Beckmannia syzigachne</i> )	6	30%
Annual Rye Grass ( <i>Lolium perene</i> )	8	40%
Fowl Bluegrass ( <i>Poa palustris</i> )	6	30%
<b>Total</b>	<b>20.0 pounds</b>	<b>100%</b>

Should a standing water condition be found at Sand Lake during construction, Enbridge does not propose to seed standing water wetland areas. It has been Enbridge's experience that the reestablishment of vegetation within standing water wetlands occurs best through natural process without supplemental seeding.

**II.B.4. Description of all measures to be implemented to minimize or mitigate the effects of the proposed action on the species:** As discussed in II.B.3, topsoil management will be employed to the extent practicable to ensure that, subsequent to backfill, wetland topsoil is available during restoration to provide a seed bank that results in rapid establishment of the native vegetation.



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the implementation of conservation and mitigation activities discussed in this document has been reserved for that purpose.

**II.C.1. A description of alternative actions the applicant considered that would not result in take, and the reasons that each of those alternatives was not selected. A “no-action” alternative is also described:** Six alternatives involving other pipelines were initially considered, but removed from further consideration because they result in the need to develop solutions for the needed crude deliveries that would be displaced on the existing lines, and they do not provide the capacity needed without installing a parallel pipeline for at least 70 percent of the route or more.

The Project (7<sup>th</sup> Alternative), is the shortest distance, is co-located along Spearhead Pipeline ROW, optimizes existing pump station and power provided to existing locations. The proposed alternative is the preferred because following the existing Spearhead pipeline corridor for over 90% of its route reduces the impacts on new landowners and the environment. Efficiency in long-term operation is also gained by co-locating the pipelines in an existing Enbridge corridor

For the purposes of this analysis, a No-Action alternative is considered a No-Project Alternative. A No-Action alternative that did not involve use of an existing or construction of a new pipeline was initially considered. This alternative was found to be not feasible because it would not meet the Project’s need as described above. The following sections review routing alternatives considered for this Project to meet purpose and need, design criteria and construction requirements, while minimizing the potential temporary and permanent impacts to social, economic, environmental, historic and cultural resources.

### ***Route Alternatives***

Co-locating or “twinning” a new crude oil pipeline parallel with the Enbridge Spearhead Pipeline was identified as the primary route to consider for the Project as this would minimize the aerial extent of property associated with the pipeline situated on new ROW, and minimize segmentation of and potential impact to land, habitats and properties. The advantages of co-location include other societal and business considerations, such as decreased ROW acquisition requirements, ease of access for construction and maintenance, minimization of Project footprint by using existing appurtenances, and the efficiencies realized through grouping pump stations and valve facilities.

In addition, numerous environmental advantages result from collocation. Co-locating the pipeline with existing facilities avoids and minimizes environmental disturbance to the maximum practicable extent possible. This directly avoids new fragmentation that would occur with new route or greenfield construction and minimizes Project impacts by expanding the existing corridor cut previously through these habitats, rather than introducing a new corridor. The new disturbance area would be adjacent to an area that has already been disturbed, including the original construction as well as required ongoing maintenance. The new pipeline will not substantially increase the disturbance area for the Project, required maintenance areas, or required access areas.

To refine the new pipeline routing, the existing Spearhead pipeline route and adjacent conditions were reviewed using a GIS database of combined numerous metadata sets; these set were viewed

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construction, and minimizes Project impacts by expanding the existing corridor cut previously through these habitats, rather than introducing a new corridor. The linear nature of the proposed Project, along with its short-term temporal time-frame, combines to limit the Project's impacts on both an area and time basis.

Project construction and restoration in the Sand Lake area is not expected to reduce the likelihood of the survival of the Yellow-Headed Blackbird in Illinois. It is anticipated that no birds would be taken by the Project because clearing and construction will occur well outside of the breeding season of the Yellow-Headed Blackbird, and any restoration that will be planned during spring 2014 will occur within the ROW where no suitable habitat will be present on the ROW as a result of the previous winters clearing and construction. Following construction, suitable habitat for the Yellow-headed Blackbird will continue to exist in the impacted area because it is Enbridge's intention to restore the habitat within the ROW affected by construction to match the immediately adjacent habitat.

**II.E.1. Assurance of compliance with all other federal, State and local regulations pertinent to the proposed action and to execution of the conservation plan:** Enbridge has applied to the Rock Island District, U.S. Army Corps of Engineers for Nationwide Permit 12 for this Project. A copy of the Permit verification from the Rock Island District will be supplied by Enbridge to the Illinois Department of Natural Resources upon its granting.

**II.E.2. Copies of any final federal authorizations for a taking already issued to the applicant, if any:** Not applicable, no federal authorizations for a taking have been issued or applied for as of this writing.

**II.E.3. For projects that will result in the taking of endangered or threatened species of plants, copies of expressed written permission of the landowner:** Copies of expressed written permission of the landowner of tracts from which endangered or threatened species of plants will be taken (if any) will be provided to the Illinois Department of Natural Resources prior to the commencement of construction. This is limited to a few landowners in the Sand Lake area. Enbridge is currently working on securing this permission and will provide documentation once it is obtained. This documentation will be provided prior to Project construction in the Sand Lake area.

### III. Conservation Plan King Rail (*Rallus elegans*)

**III.A.1. Legal description, if available, or detailed description of the area to be affected by the proposed action:** Figure 2 indicates via hatching the mapped species buffer polygon for the King Rail that is included within the construction ROW for the current Project alignment. This 2.72-acre overlap of mapped species buffer polygon for the King Rail with construction ROW occurs on the following parcels:

Enbridge GIS Parcel No.: IL-MA-0590.000;  
Mason County Assessor PIN: 10-08-300-001-0021  
Mason County Assessor Parcel No.: 454000.000000  
Owner Name: S & D FARMS, INC.  
Legal Description: PT NW1/4 SW1/4 8 21 8 126  
Parcel size: 41.49 acres  
Township No.: 5; Township Name: Havana

with tail uplifted and white undertail coverts extended. Calls and courtship feeding are also performed. The male selects the nest site and is apparently more active in building nest than female. Egg laying has been recorded in Illinois from May 4 to June 26. The average clutch size is 10 to 12, laid one per day. Eggs are pale buff sparingly or irregularly spotted with browns, 1.6 by 1.2 inches in size. Incubation lasts 21 to 23 days and is performed by both sexes. Young either follow their parents to feeding areas or remain concealed in grasses waiting for food to be delivered. A pair may remain with its brood for over a month while staying within approx. 100 feet of the nest for the first three weeks. Young begin to fly at approximately nine weeks.

During the nesting season, King Rails use deeper water in areas dominated by short emergent cover, while during the brood-rearing season they use shallower water in areas dominated by short emergent cover and avoid areas dominated by tall emergent cover. King Rails, like many other marsh birds, tend to select habitats based on structure rather than plant species.

**III.A.3. Description of the activities that may result in taking:** Activities that may potentially result in taking all involve either direct ground disturbance, or indirect disturbance by trafficking. The main features of pipeline construction along these lines include the following:

- Clearing (indirect construction traffic);
- ROW preparation (grading, topsoil stripping);
- Pipeline fabrication (stringing, welding, grinding, coating, and x-ray);
- Trenching and spoil storage;
- Backfill; and,
- Post construction grading and restoration.

**III.A.4. Explanation of the anticipated adverse effects on the species/estimated quantification of take:** The number of King Rails currently utilizing the Project construction ROW portion of Sand Lake is unknown. However, the overlap of mapped species buffer polygon for the King Rail with construction ROW covers approximately 2.72 acres. Enbridge does not expect to have any direct take of King Rails because constructing outside of the breeding season completely avoids take. Any potential modification to habitat will be temporary as construction procedures (explained below) typically result in return to the original contours in wetlands and full restoration within one to two years of construction.

**III.B.1. Measures to be taken to minimize and mitigate the impact on the species and the funding that will be available to undertake these measures:** To minimize the environmental impact of pipeline construction, Enbridge's Environmental Mitigation Plan (EMP) described activities associated with pipeline construction and procedures that will be implemented during Project construction to minimize the environmental impacts of these activities (see **Attachment A**). The EMP is intended to meet or exceed applicable federal, state, and local environmental protection and erosion control specifications and practices, is designed to address typical circumstances, and may be amended by Enbridge as necessary to address site-specific conditions. Specific activities that may affect habitat for the King Rails are described along with minimization procedures below.

### *Clearing*

Low ground pressure equipment will be used, as practical to limit disturbance to the wetland. When clearing in wetlands, the following restrictions will apply:

### ***Backfilling***

During backfilling of wetland areas, subsoil material removed from the trench during construction will be placed back into the trench. Segregated topsoil will not be used as padding and will be returned to its original horizon over the backfilled trench.

### ***Rough Grading, Cleanup, and Temporary Restoration***

Cleanup typically will involve removing construction debris and replacing fences removed during construction. Rough grading will include restoring contours and installing or repairing temporary erosion control measures. Temporary slope breakers will be installed near the boundary between the wetland and adjacent sloped approaches, to prevent sediment flow into the wetland. Every effort will be made to begin cleanup and rough grading (including installation of temporary erosion control measures) as soon as practical after the trench is backfilled, weather permitting.

Where required, disturbed wetland areas will be revegetated naturally or in an agreed upon manner. No fertilizer, lime, or mulch will be applied in wetlands.

To the maximum extent practicable, Enbridge has set the timing of clearing and pipeline construction activities to avoid disturbing nesting activities of all bird species, including the King Rail (see **Attachment A**, Enbridge Environmental Mitigation Plan). Cleanup and restoration activities associated with construction will be done during non-breeding season. However, some clean-up and restoration activities post-construction may extend into the nesting season. Construction activities will be minimized in King Rail habitat to the extent practicable. The Contractor will also use special construction techniques (including timber mats, see discussion in **Section III.B.4**, below) to minimize the disturbance to plants and soils and to protect wetland hydrology in this habitat. The intent of these techniques is to minimize construction-related disturbance and sedimentation of the habitat and to restore the habitat as nearly as possible to pre-existing conditions.

**III.B.2. Plans to minimize the area affected by the proposed action, the estimated number of individuals of the species that will be taken and the amount of habitat affected:** Clearing of the Project construction ROW and associated construction activities are anticipated to begin in August of 2013. Both of these activities would be outside of the King Rail's normal nesting period.

Under normal circumstances, Enbridge plans to use a 135-foot-wide construction ROW to fabricate and install the pipeline. In heavily forested uplands, waterways, and emergent wetlands, the construction ROW, will be reduced to 110 feet. The ROW would be further reduced to 85 feet in forested and scrub/shrub wetlands, as well as the habitat of Sand Lake, and in waterways adjacent to these features. Following construction, an area measuring 50 feet in width will be maintained for operation of the pipeline.

**III.B.3. Plans for management of the area affected by the proposed action that will enable continued use of the area by the species:** Saturated wetlands have water to the ground surface or contain standing water. Unsaturated wetlands have the free water surface at some depth below the soil surface. Since Sand Lake is considered an intermittent lake, existing about half the time during the growing seasons over the last several decades, the saturation status of the

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While some restoration activities may occur during the nesting season for the King Rail, restoration activities will be confined to the construction right-of-way that will have been cleared and will not have suitable breeding habitat (e.g. cattails and emergent vegetation) until after restoration is complete and revegetation has been initiated by natural regrowth from the seed bank or reseeded with the approved wetland vegetation seed mix.

**III.B.5. Plans for monitoring the effects of measures implemented to minimize or mitigate the effects of the proposed action on the species:** The habitat left after Project post-construction reclamation activities (emergent marsh with or without standing water depending on precipitation cycles) will be the same as that which is taken. Enbridge will conduct one (1) preconstruction survey during the King Rail breeding season (between May 1 and May 14) within the Project corridor in the Sand Lake vicinity using a version of the protocol established in Conway, C.J., 2011. *Standardized North American Marsh Bird Monitoring Protocol*. The survey route will be the Project centerline and survey points will be spaced at 200-meter intervals along this route within Sand Lake. Because many marsh birds (including King Rails) are secretive, seldom observed and vocalize infrequently, the Standardized North American Marsh Bird Monitoring Protocol instructs surveyors to broadcast calls to elicit vocalizations during surveys. In the version to be used at Sand Lake, only King Rail calls will be broadcast. To prevent the call-broadcast at one point from affecting the distribution of birds at adjacent points, broadcast speakers will be directed in alternating directions perpendicular to the survey route (e.g., first NNW, then SSE) at successive survey points. Surveyors will estimate and record the distance and direction from the survey point to each individual King Rail that responds with vocalizations. The estimated locations of responding King Rails will be recorded on Project mapping. This survey procedure will be repeated during the first nesting season following construction. A brief report of survey results will be submitted to IDNR by December 31st of each survey year.

We note that the King Rail is known in Mason County from one 1994 occurrence (Nyboer, R.W., J.R. Herkert and J.E. Ebinger. 2006. *Endangered and Threatened Species of Illinois: Status and Distribution, Volume 2 – Animals*). Surveys should document presence/absence of both species and habitat, and would be discontinued once habitat within the construction ROW is similar to the immediately adjacent habitat.

**III.B.6. Adaptive management practices that will be used to deal with changed or unforeseen circumstances that affect the effectiveness of measures instituted to minimize or mitigate the effects of the proposed action on the species:** As discussed above, Enbridge will either seed or not seed habitat after construction activities, depending on the presence or absence of standing water. Enbridge will document the restoration of the wetland within the ROW to adjacent wetland conditions. If similar habitat conditions do not return to the construction ROW, Enbridge will rehabilitate the ROW to match adjacent habitat conditions.

**III.B.7. Verification that adequate funding exists to support and implement all mitigation activities described in the conservation plan:** Enbridge verifies that all funding necessary for the implementation of conservation and mitigation activities discussed in this document has been reserved for that purpose.

## HABITAT CONSERVATION PLANS AND INCIDENTAL TAKE AUTHORIZATION

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data sets available with new imagery populated in a GIS data management system. Datasets incorporated into the GIS database included:

- Recent aerial high resolution imagery provided by Enbridge;
- LIDAR data acquired by Enbridge;
- U.S. Geological Survey (USGS) topographic maps;
- U.S. Department of Agriculture (USDA) soil series data;
- U.S. Fish and Wildlife Service National Wetland Inventory (NWI) data;
- Land ownership by tract;
- Urbanized areas;
- Federal and state lands including tribal lands, parks, wildlife refuges and US ACE property; and,
- Datasets and information from applicable State Historic Preservation Officers (SHPOs) and Tribal Historic Preservation Officers (THPOs).

The compiled datasets were simultaneously reviewed by representatives from Enbridge's ROW, engineering, construction and environmental staff. As the route was reviewed in detail for the length of the line, decisions were made to deviate from the Spearhead centerline to avoid environmental features (such as wetlands), constructability constraints (such as encroachment of residential areas on the ROW) and to facilitate road and waterbody crossing designs. The review teams strived to route the Project as close to the Spearhead Pipeline as possible. Route deviations were limited to those necessary to avoid or mitigate resources, or to where engineering staff deemed the existing corridor to be difficult to follow for safety and constructability issues.

In some locations, however, new residential and other infrastructure development has occurred adjacent to the Spearhead Pipeline since pipeline completion in the early 1950s. Enbridge has considered routing the Project away from the Spearhead Pipeline in these areas to avoid engineering and safety constraints such as, close proximity to homes, construction impacts on these developments, and the increased disturbances to homes and infrastructure that would be encountered in these areas. The route has been designed to avoid these areas where possible.

As the pipeline route was refined, Enbridge further examined river and stream crossings and National Wetland Inventory mapping to identify opportunities for additional and/or slight route modifications where possible and practicable, to better avoid and minimize resource impacts.

Finally, as resources were surveyed, impacts on jurisdictional wetland areas have been further avoided and minimized through finely controlled corridor width adjustments.

**III.D.1. Information to indicate that the proposed taking will not reduce the likelihood of the survival of the species in the wild within the State of Illinois, the biotic community of which the species is a part or the habitat essential to the species existence in Illinois:** Impacts to potential habitat during construction and post construction will be minimized. The Project will be constructed following the construction protocols documented in the Enbridge Environmental Mitigation Plan and provided above. Co-locating the Project with existing facilities avoids and minimizes environmental disturbance to the maximum extent practicable. This directly avoids new fragmentation that may occur with a new route or greenfield construction, and minimizes Project impacts by expanding the existing corridor cut previously through these habitats, rather than introducing a new corridor. The linear nature of the proposed

## HABITAT CONSERVATION PLANS AND INCIDENTAL TAKE AUTHORIZATION

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Mason County Assessor PIN: 10-08-300-004-0021  
Mason County Assessor Parcel No.: 453000.000000  
Owner Name: S & D FARMS, INC.  
Legal Description: NE1/4 SW1/4 8 21 8 126  
Parcel size: 40.94 acres  
Township No.: 5; Township Name: Havana

**IV.A.2. Biological data on Illinois Chorus Frog (*Pseudacris streckeri illinoensis*):** The Illinois Chorus Frog is restricted to areas of sandy substrates found in the floodplains of the Mississippi and Illinois rivers in Arkansas, Illinois, and Missouri. Because these habitats have been converted to agriculture or developed for other human activities, *P. s. illinoensis* is now uncommon. It is listed as a threatened species in Illinois and is known to occur in nine counties in Illinois.

The Illinois Chorus Frog breeds in sandy bottomed ponds, but does not coexist with predatory fish, which eat frog eggs and tadpoles. It requires loose sand for aestivation and hibernation. The Illinois Chorus Frog is an early spring breeder (March-April) and after breeding, adults return to their dispersed burrowing areas. If their natal ponds last long enough for tadpoles to metamorphose, in about late May to mid-June, the transformed froglets migrate to suitable habitat to spend the remainder of the year. They are highly fossorial (i.e., live underground) and migrate to preferred areas of sandy soil with sparse vegetation or absence of vegetation. They require substrates with poor to very poor sod development to accommodate their fossorial habits. Bare areas known as "blowouts" apparently provide good non-breeding habitat for the frogs. Blowouts are sandy depressions in a sand dune ecosystem (psammosere) caused by the removal of sediments by wind. Blowouts occur in partially vegetated dunefields or sandhills. A blowout forms when a patch of protective vegetation is lost, allowing strong winds to "blow out" sand and form a depression. The post-breeding activity is subterranean, with frogs seldom or never coming to the surface during non-breeding seasons. During the hotter summer months they live and feed underground where the temperature is more moderate. In the winter they stay underground and become dormant until spring. The heavy front legs of this species make it easy for them to dig through the sand headfirst. The diet of this frog consist of insects (both adults and larvae) while they are above ground and of a variety of small invertebrates when the frogs are underground. This frog species has two main requirements: sand substrates for burrowing during non-breeding seasons, and ephemeral, fishless bodies of water that persist long enough to allow for breeding and transformation of at least some of the froglets. *P. s. illinoensis* is able to feed underground, a unique aspect of the biology of this frog.

Frog above-ground activity is strongly influenced by rainfall. Close correlations with rainfall should be expected in species that depend on ephemeral aquatic habitats for successful reproduction. For *Pseudacris s. illinoensis*, timing of surface movements may be particularly critical as at these times the frogs leave their relatively safe subterranean habitats to enter surface habitats where they are likely exposed to many sources of mortality not otherwise encountered by a fossorial frog. It appears that this frog is relatively short lived with low juvenile survivorship but rapid growth to maturity.



from the wetland for disposal. Chips, hydro-axe debris, or similar material may be left in the wetland if spread evenly on the ROW, in a manner which will allow for normal revegetation as allowed by permits.

### ***Sedimentation Control Practices***

Silt fence and other erosion control methods will be installed and maintained in proper working order to prevent the flow of sediment into wetlands and waterbodies from spoil piles or sloped approaches that are adjacent to wetlands and waterbodies. When the depth of sediment reaches one-third of the height of a sediment barrier, the barrier will be replaced and/or the sediment removed. Non-functional sediment-control measures will be repaired, replaced, or supplemented with functional features as soon as possible.

### ***Right-of-Way Stabilization***

Tree stumps, brush riprap, imported dirt, and rock fill will not be brought in to stabilize the ROW in wetlands. Where a wetland cannot support construction equipment, and low ground-weight equipment is not used, construction activities will be accomplished from timber construction mats. Subsoil from the pipeline trench within the immediate wetland may be placed on top of equipment mats for additional stabilization. Timber mats are preferred materials that can be brought into a wetland and placed on the working side of the construction ROW. Timber mats may be placed over the ditch line to facilitate trench excavation. All timber mats will be removed during cleanup of wetlands.

### ***Trenching***

Excavation of the pipeline trench in wetlands typically will be accomplished using backhoe excavators. The duration of open trench will be minimized to the extent possible.

### ***Topsoil Segregation***

Where feasible (normally in wetland areas without standing water or saturated soils), up to one foot of native topsoil will be stripped from the trench line and stockpiled separate from trench spoil.

### ***Trench Breakers***

Where the pipeline trench has the potential to partially drain a wetland, trench breakers will be installed as necessary to maintain the original wetland hydrology.

### ***Backfilling***

During backfilling of wetland areas, subsoil material removed from the trench during construction will be placed back into the trench. Segregated topsoil will not be used as padding and will be returned to its original horizon over the backfilled trench.

### ***Rough Grading, Cleanup, and Temporary Restoration***

Cleanup typically will involve removing construction debris and replacing fences removed during construction. Rough grading will include restoring contours and installing or repairing temporary erosion control measures. Temporary slope breakers will be installed near the boundary between the wetland and adjacent sloped approaches, to prevent sediment flow into the wetland. Every effort will be made to begin cleanup and rough grading (including installation of temporary erosion control measures) as soon as practical after the trench is backfilled, weather permitting.



**Table IV-1- Unsaturated Wetland Seed Mix – General Restoration Mix**

<b>Seed Name</b>	<b>Pure Live Seed (Pounds Per Acre)</b>	<b>Percent (%) of Seed</b>
American Slough Grass ( <i>Beckmannia syzigachne</i> )	6	30%
Annual Rye Grass ( <i>Lolium perene</i> )	8	40%
Fowl Bluegrass ( <i>Poa palustris</i> )	6	30%
<b>Total</b>	<b>20.0 pounds</b>	<b>100%</b>

Should a standing water condition be found at Sand Lake during construction, Enbridge does not propose to seed standing water wetland areas. It has been Enbridge’s experience that the reestablishment of vegetation within standing water wetlands occurs best through natural process without supplemental seeding.

**IV.B.4. Description of all measures to be implemented to minimize or mitigate the effects of the proposed action on the species:** As discussed in IV.B.3, topsoil management will be employed to the extent practicable to ensure that, subsequent to backfill, wetland topsoil is available during restoration to provide a seed bank that results in rapid establishment of the native vegetation.

Timber mats are supplemental equipment supports which will be used in wetlands to provide temporary portable support for heavy construction equipment to reduce ground pressure and minimize soil compaction and/or soil mixing. Timber mats are placed on the working side of the construction ROW. Timber mats may be placed over ditch lines to facilitate trench excavation. All timber mats will be removed during cleanup of wetlands.

Cleanup and rough grading (including installation of temporary erosion control measures) will begin as soon as practical after the trench is backfilled, weather permitting. Following completion of all construction outside of the breeding and metamorphosis season, the Project ROW will be restored to its pre-construction conditions as practical.

While some restoration activities may occur during the breeding season for the Illinois Chorus Frog, which could potentially cause direct take by grading and crushing by heavy equipment. Subsided areas along the trench may be very attractive frog breeding locations that would be disturbed during restoration of the original contours through grading. Monitoring of such locations will occur to ensure that Illinois Chorus Frog breeding locations are not restored while the frogs/tadpoles are still present.

**IV.B.5. Plans for monitoring the effects of measures implemented to minimize or mitigate the effects of the proposed action on the species:** The habitat left after Project post-construction reclamation activities (emergent marsh with or without standing water depending on precipitation cycles) will be the same as that which is disturbed. Enbridge will conduct a preconstruction survey of the Project corridor within Sand Lake for Illinois Chorus Frog breeding activity using a nighttime calling survey to document the presence/absence of the species. The monitoring protocol used will be a modification of that described in Tucker, J.K and J.H. Chick, 2007, *State Wildlife Grant Proposal #T45 D-1*. The Project corridor within Sand

## HABITAT CONSERVATION PLANS AND INCIDENTAL TAKE AUTHORIZATION

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extent of property associated with the pipeline situated on new ROW, and minimize segmentation of and potential impact to land, habitats and properties. The advantages of collocation include other societal and business considerations, such as decreased ROW acquisition requirements, ease of access for construction and maintenance, minimization of Project footprint by using existing appurtenances, and the efficiencies realized through grouping pump stations and valve facilities.

In addition, numerous environmental advantages result from collocation. Co-locating the pipeline with existing facilities avoids and minimizes environmental disturbance to the maximum practicable extent possible. This directly avoids new fragmentation that would occur with new route or greenfield construction and minimizes Project impacts by expanding the existing corridor cut previously through these habitats, rather than introducing a new corridor. The new disturbance area would be adjacent to an area that has already been disturbed, including the original construction as well as required ongoing maintenance. The new pipeline will not substantially increase the disturbance area for the Project, required maintenance areas, or required access areas.

To refine the new pipeline routing, the Spearhead pipeline route and adjacent conditions were reviewed using a GIS database of combined numerous metadata sets; these set were viewed in relation to the Spearhead Pipeline overlay. This remote route analysis was conducted in November 2011, as well as March and June 2012. Each route analysis utilized the most current data sets available with new imagery populated in a GIS data management system. Datasets incorporated into the GIS database included:

- Recent aerial high resolution imagery provided by Enbridge;
- LIDAR data acquired by Enbridge;
- U.S. Geological Survey (USGS) topographic maps;
- U.S. Department of Agriculture (USDA) soil series data;
- U.S. Fish and Wildlife Service National Wetland Inventory (NWI) data;
- Land ownership by tract;
- Urbanized areas;
- Federal and state lands including tribal lands, parks, wildlife refuges and US ACE property; and,
- Datasets and information from applicable State Historic Preservation Officers (SHPOs) and Tribal Historic Preservation Officers (THPOs).

The compiled datasets were simultaneously reviewed by representatives from Enbridge's ROW, engineering, construction and environmental staff. As the route was reviewed in detail for the length of the line, decisions were made to deviate from the Spearhead centerline to avoid of environmental features (such as wetlands), constructability constraints (such as encroachment of residential areas on the ROW) and to facilitate road and waterbody crossing designs. The review teams strived to route the Project as close to the Spearhead Pipeline as possible. Route deviations were limited to those necessary to avoid or mitigate resources, or to where engineering staff deemed the existing corridor to be difficult to follow for safety and constructability issues.

In some locations, however, new residential and other infrastructure development has occurred adjacent to the Spearhead Pipeline since pipeline completion in the early 1950s. Enbridge has considered routing the Project away from the Spearhead Pipeline in these areas to avoid

**IV.E.3. For projects that will result in the taking of endangered or threatened species of plants, copies of expressed written permission of the landowner:** Copies of expressed written permission of the landowner of tracts from which endangered or threatened species of plants will be taken (if any) will be provided to the Illinois Department of Natural Resources prior to the commencement of construction. This is limited to a few landowners in the Sand Lake area. Enbridge is currently working on securing this permission and will provide documentation once it is obtained. This documentation will be provided prior to Project construction in the Sand Lake area.

**HABITAT CONSERVATION PLANS AND INCIDENTAL TAKE AUTHORIZATION**

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**V. Agreement**

The implemented agreement, which includes:

**V.A.1. The names and signatures of all participants in the execution of the above conservation plans.**

Enbridge Pipelines (FSP) L.L.C.

\_\_\_\_\_  
Name Title Date

Illinois Department of Natural Resources

\_\_\_\_\_  
Name Title Date

**V.A.2. The obligations and responsibilities of each of the identified participants with schedules and deadlines for completion of activities included in the above conservation plans and a schedule for preparation of progress reports to be provided to the Department.**

Construction of the Project according to the techniques outlined in the Enbridge Environmental Mitigation Plan, August 2012 (see **Attachment A**), is the responsibility of Enbridge Pipelines (FSP) L.L.C. Construction of the Project in Illinois is to commence \_\_\_\_\_ and to conclude \_\_\_\_\_.

Monitoring and reporting as outlined in this Conservation Plan is the responsibility of Enbridge Pipelines (FSP) L.L.C. and its designees. Monitoring and reporting to the Department are to occur in \_\_\_\_\_ and \_\_\_\_\_.

The review of this Conservation Plan and subsequent issuance on the incidental take permit is the responsibility of the Illinois Department of Natural Resources, according to 17 IL ADMIN CODE, CH. 1, SEC. 1080.

**V.A.3a.5.C. Certification that each participant in the execution of the above conservation plans has the legal authority to carry out their respective obligations and responsibilities under the conservation plan.**

As \_\_\_\_\_ of Enbridge Pipelines (FSP) L.L.C., I hereby certify that I have the legal authority to carry out the obligations and responsibilities of Enbridge Pipelines (FSP) L.L.C. under this Conservation Plan.

\_\_\_\_\_  
Name Date

As \_\_\_\_\_ of the Illinois Department of Natural Resources, I hereby certify that I have the legal authority to carry out the obligations and responsibilities of the Illinois Department of Natural Resources under this Conservation Plan.

\_\_\_\_\_  
Name Date