- Lake Andes Wetland Management District, 38672 291st Street, lake Andes, South Dakota 57356, Telephone No. (605) 487-7603.

State Wildlife Management Areas

Further, the proposed pipeline project may cross State Wildlife or Fishing areas that have been acquired by the States with Federal Assistance funds through the Pittman-Robertson Wildlife Restoration Act (PR) or the Dingell-Johnson Sport Fish Restoration Act (DJ). Certain restrictions apply to these lands which may have to be addressed before work can take place. The project proponent should contact the State agencies listed to determine if the project will cross any State areas which have been acquired with PR or DJ funds.

The Service appreciates the opportunity to review and comment on the two proposed pipeline projects. Should you have questions, please contact Mr. John Cochnar within the Nebraska Field Office at john_cochnar@fws.gov or (308)382-6468, extension 20.

Sincerely,

Assistant Regional Director
Ecological Services

REFERENCES

Edison Electric Institute and the Raptor Research Foundation. 1996. Suggested Practices for Raptor Protection on Power Lines - The State of the Art in 1996. Washington, D.C.

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ENCLOSURE 1

County Lists of Federally Listed and Candidate Species And Federally Designated Critical Habitats

State/ County	Bald Eagle (T)	Decurrent false aster (T)	Gray bat (E)	Gray wolf (E)	Higgins eye Pearly mussel (E)	Indiana bat (E)	Interior least Tern (E)	Pallid sturgeon (E)	Piping plover (T)	Running buffalo clover (E)	Scaleshell mussel (E)	Topeka shiner (E)	Western prairie fringed orchid (T)	Whooping crane (E)	Dakota Skipper (C)	Eastern massasauga (C)
Illinois																
Bond	X					X										X
Fayette	X															X
Madison	X	X	X			X		X								
Marion						X										
Kansas																
Brown	X															
Butler	X											X				
Clay	X															
Cowley	X						X		X					X		
Dickinson	X							X				X/CH				
Doniphan	X															
Marion	X											X/CH				
Marshall	X											X/CH				
Missouri																
Audrain						X										
Buchanan	X					X										
Caldwell						X										
Carroll	X					X										
Chariton	X					X										X
Clinton	X					X										
Lincoln	X					X										
Montgomery	X					X										
Randolph						X										

State/ County	Bald Eagle (T)	Decurrent false aster (T)	Gray bat (E)	Gray wolf (E)	Higgins eye Pearly mussel (E)	Indiana bat (E)	Interior least Tern (E)	Pallid sturgeon (E)	Piping plover (T)	Running buffalo clover (E)	Scaleshell mussel (E)	Topeka shiner (E)	Western prairie fringed orchid (T)	Whooping crane (E)	Dakota Skipper (C)	Eastern massasauga (C)
Nebraska Butler	X						X		X							
Cedar	X				X		X	X	X		X					
Colfax	X						X		X							
Gage	X															
Jefferson	X															
Platte	X						X		X							
Saline	X															
Seward	X												X	X		
Stanton	X												X			
Wayne	X															
North Dakota Barnes	X													X		
Cavalier	X			X										X		
Dickey	X			X										X		
Grand Forks	X			X												
Griggs	X													X		
Lamoure	X													X		
Nelson	X			X												
Pembina	X			X												
Ransom	X												X		X	
Sargent	X			X											X	
Steele	X															
Walsh	X			X												
Oklahoma Kay	X						X		X							
Noble	X						X		X					X		
Payne	X						X		X					X		

State/ County	Bald Eagle (T)	Decurrent false aster (T)	Gray bat (E)	Gray wolf (E)	Higgins eye Pearly mussel (E)	Indiana bat (E)	Interior least Tern (E)	Pallid sturgeon (E)	Piping plover (T)	Running buffalo clover (E)	Scaleshell mussel (E)	Topeka shiner (E)	Western prairie fringed orchid (T)	Whooping crane (E)	Dakota Skipper (C)	Eastern massasauga (C)
South Dakota Beadle	X											X/CH		X		
Clark	X											X/CH		X		
Day	X								X				X			
Hanson	X											X/CH				
Hutchinson	X											X/CH				
Kingsbury	X							X				X/CH				
Marshall	X															
McCook	X											X/CH				
Miner	X											X/CH				
Yankton	X				X		X	X	X		X	X/CH	X			

KEY

E – Endangered Species
T – Threatened Species
X – Species Occurrence in this County
CH – Critical Habitat
C - Candidate

Federally Listed And Candidate Species Occurrences, Habitats, and Impacts

Bald Eagle

The bald eagle (*Haliaeetus leucocephalus*), federally listed as threatened, nests, migrates, and winters in all seven States and within most of the counties along the proposed Keystone and Cushing pipeline routes. Bald eagles utilize mature, forested, riparian areas near rivers, streams, lakes, and wetlands. Bald eagles nest in the seven States generally from early February through mid-August and can vary by State to State. Bald eagles often return to use the same nest and winter roost year after year. Because bald eagles are particularly sensitive to human disturbance at their nests and communal roosts, protective buffers should be implemented around these areas [U.S. Bureau of Land Management (BLM) 2003, Buehler et al. 1991, Greater Yellowstone Bald Eagle Working Group (GYBEWG) 1996, Montana Bald Eagle Working Group (MBEWG) 1994, Stalmaster and Newman 1978, U.S. Fish and Wildlife Service (USFWS) 1986]. Disturbances near an active nest or within line-of-sight of the nest could cause adult eagles to discontinue nest building or to abandon eggs. Generally, bald eagle nest buffer recommendations include restricting activities within 1-mile of bald eagle nests in open country (BLM and USFWS 2002, 2003). In more heavily forested or mountainous areas, where the line-of-sight distance from the nest is shorter, this buffer distance could potentially be reduced (see Stalmaster and Newman 1978, USFWS 1986). During the nesting season bald eagle nest buffers should receive maximum protection during this time period. Also, for some activities (construction, seismic exploration, blasting, and timber harvest), a limited disturbance home range buffer may be required to extend outward into potential foraging habitat for 2.5 miles from the nest (GYBEWG 1996).

The bald eagle southward migration begins as early as October and the wintering period extends from December-March. Bald eagles roost in a forested area known as a communal roost. A communal roost is generally defined as an area where six or more eagles spend the night within 100 meters (328 feet) of each other (GYBEWG 1996). Human disturbances and loss of eagle wintering habitat can cause undue stress leading to cessation of feeding and failure to meet winter thermoregulatory requirements. These effects can reduce the carrying capacity of preferred wintering habitat and reproductive success for the species. For bald eagle communal winter roosts, the Service recommends that disturbance be restricted within 1 mile of known communal winter roosts during the period of November 1 to April 1 (BLM and USFWS 2002, 2003). The Service recommends that habitat altering activities be prohibited within 0.5-mile of active roost sites year round.

Disturbance sensitivity of roosting and nesting bald eagles may vary between individual eagles, topography, and intensity of activities. The buffers and timing stipulations, as described above, are normally implemented unless site-specific information indicates otherwise. Modification of buffer sizes may be permitted where biologically supported and in coordination with the Service.

Decurrent False Aster

The threatened decurrent false aster (*Boltonia decurrens*) is known to occur in Madison County, Illinois, in the floodplain of the Mississippi River. A number of populations of the plant occur in Mississippi/Missouri River floodplain in St. Charles County at the east end of Missouri. The plant occurs in seasonally flooded emergent wetlands. These wetland habitats

should be evaluated for their suitability to the plant. It occupies disturbed alluvial soils in the floodplain. Federal regulations prohibit any commercial activity involving this species or the destruction, malicious damage or removal of this species from Federal land or any other lands in the knowing violation of State law or regulation, including State criminal trespass law. A survey for this species may be necessary before earth disturbing activities occur.

Gray Bat

The endangered gray bat (*Myotis grisescens*) inhabits caves throughout the year. This species forages over rivers and reservoirs adjacent to forests. A search for this species should be made prior to any cave impacting activity in Madison County, Illinois.

Gray Wolf

The endangered gray wolf (*Canis lupus*) is an occasional visitor in North Dakota and most often seen in the Turtle Mountain area. The gray wolf that would occur in North Dakota as well as South Dakota are part of the Great Lakes Region Population, as well as the Western Great Lakes Distinct Population Segment (DPS). On March 16, 2006, the Service published in the *Federal Register* a proposal to delist the gray wolf in the Western Great Lakes DPS.

Higgins Eye Pearlymussel and Scaleshell Mussel

Shells of the endangered Higgins eye pearlymussel (*Lampsilis higginsii*) and Scaleshell mussel (*Leptodea leptodon*) have been recently found below the Gavins Point Dam. While populations of these mussels are not known in this reach of the Missouri River, there have been shells found there. With the long term nature of this project, it is appropriate to alert TransCanada of these shells and allow your environmental documents an opportunity to address these issues. These mussels require good water quality, and can be found in a variety of river habitats, including riffle areas with gravel, cobble, or boulder substrates, mud, or sand.

Indiana Bat

The Indiana bat (*Myotis sodalis*) is a federally endangered species found east of the Missouri River in all counties of Missouri and all counties except for Fayette County in Illinois where the pipeline project is proposed to be routed. Potential habitat for this species occurs statewide in Illinois, therefore, Indiana bats are considered to potentially occur in any area with forested habitat. Indiana bats migrate seasonally between winter hibernacula and summer roosting habitats. Winter hibernacula include caves and abandoned mines. These bats hibernate in large, tight clusters which may contain thousands of individuals. Very few caves exist that provide the conditions necessary for hibernation. Stable, low temperatures are required to allow the bats to reduce their metabolic rate and conserve fat reserves. Indiana bats are subject to natural hazards during hibernation, such as cave flooding, however, humans have been the major cause of declining bat populations. The clusters of hibernating bats are very susceptible to disturbance and vandalism. People touring caves can disturb bats and cause them to awaken. When a bat is aroused, it uses energy at a higher rate, which decreases the energy supply available for the rest of the winter. Females emerge from hibernation in late March or early April to migrate to summer roosts. Females form nursery colonies under the loose bark of trees (dead or alive) and/or cavities, where each female gives birth to a single young in June

or early July. A maternity colony may include from one to 100 individuals. A single colony may utilize a number of roost trees during the summer, typically a primary roost tree and several alternates. Some males remain in the area near the winter hibernacula during the summer months, but others disperse throughout the range of the species and roost individually or in small numbers in the same types of trees as females. The species or size of trees does not appear to influence whether Indiana bats utilize a tree for roosting provided the appropriate bark structure is present. However, the use of a particular tree does appear to be influenced by weather conditions, such as temperature and precipitation. Indiana bats give birth to only one young in midsummer. These young bats are capable of flight in a month. The remainder of the summer and fall is then spent accumulating fat reserves for hibernation. Indiana bats feed entirely on night flying insects, and a colony of bats can consume thousands of insects each night. Bats locate these insects by emitting high-pitched sounds and waiting for the echo, which allows them to zoom in on the bug's location. The fat reserves accumulated by devouring these large quantities of insects during the summer and fall allow the bat to sustain itself during hibernation.

During the summer, Indiana bats frequent the corridors of small streams with well-developed riparian woods, as well as mature upland and bottomland forests. The species forages for insects along stream corridors, within the canopy of floodplain and upland forests, over clearings with early successional vegetation (old fields), along the borders of crop lands, along wooded fence rows, and over farm ponds and in pastures. It has been shown that the foraging range for the bats varies by season, age and sex and ranges up to 81 acres (33 ha). Surveys for maternity roosts or bachelor colonies may be necessary if the route of the proposed Keystone pipeline goes through well developed riparian woodlands, bottomland forest or upland forest. A search for this species should be made prior to any cave impacting activities. In addition to impacts to the Indiana bat at its hibernacula, being an insectivore, the increased use of pesticides has undoubtedly resulted in the poisoning and decline of this species. Further, the clearing of forests has caused a decline in the summer habitat of the Indiana bat. Surveys for maturity roosts may be necessary if the route of the propose pipeline goes through well developed riparian woodlands or upland forests. Coordination with the Service regarding the use of certain types of pesticides to maintain pipeline right-of-way is recommended prior to their application.

Least Tern and Piping Plover

The least tern (*Sterna antillarum*), federally listed as endangered, and the piping plover (*Charadrius melodus*), federally listed as threatened, nest on unvegetated or sparsely vegetated sandbars in river channels and wetlands. Least terns and piping plovers are known to nest on the major river systems in South Dakota, Nebraska, and Kansas including the Platte, Loups, Niobrara, and Missouri and Arkansas rivers. Least tern will also nest on bare alluvial or dredge spoil islands and sand/gravel bars in or adjacent to rivers, lakes, gravel pits and cooling ponds. It also utilizes habitats along the Mississippi River in Illinois. Least terns feed on small fish in the river and piping plovers forage for invertebrates on exposed beach substrates. The nesting season for the least tern and piping plover is from April 15 through September 15. It is likely that both species nest at nearby sandpits, and forage on the Platte River. Channel constrictions caused by bridges, causeways, bridge approaches, roadway embankments, bank stabilization, levees, and other unnatural obstructions can result in the loss of broad, shallow, unobstructed channel and sandbar complexes used as feeding and potential nesting habitat by

least terns and piping plovers. Additionally, ill-timed human activities in the vicinity of such feeding and nesting habitats can disturb least terns and piping plovers. Depletions of instream flows in Nebraska from the Platte River have negative impacts on least terns and piping plovers. Surveys for nesting piping plovers and least terns should be performed prior to any construction, and no construction should take place within 1/4 mile of any known piping plover or least tern nest.

Pallid Sturgeon

The pallid sturgeon (*Scaphirhynchus albus*) was officially listed as an endangered species on September 6, 1990. In South Dakota, the pallid is known to occur in the Missouri River. In Nebraska, the pallid sturgeon is found in the Missouri and lower Platte rivers, while in Kansas and Missouri, it is found in the Missouri River. Pallids are found in the Mississippi River downstream of Melvin Price Locks and Dam in Illinois. Floodplains, backwaters, chutes, sloughs, islands, sandbars, and main channel waters formed the large-river ecosystem that provided macrohabitat requirements for the pallid sturgeon, a species that is associated with diverse aquatic habitats. These habitats historically were dynamic and in a constant state of change due to influences from the natural hydrograph, and sediment and runoff inputs from an enormous watershed spanning portions of ten States and Canada. Navigation, channelization and bank stabilization, and hydropower generation projects have caused the widespread loss of this diverse array of dynamic habitats once provided to pallid sturgeon on the Missouri and Mississippi rivers, resulting in a precipitous decline in populations of the species. Due to the scope of this project, it is likely that the pallid sturgeon would not be adversely impacted along the lower Platte River in Nebraska, except if an activity that would cause a depletion to the Platte River were to occur. However, the pallid sturgeon could be adversely impacted from the crossing of the Missouri and Mississippi rivers unless directional drilling methods are employed.

Running Buffalo Clover

Running buffalo clover (*Trifolium stoloniferum*) is an endangered plant that occurs on the floodplain of the Cuivre River, Cuivre River State Park, Lincoln County, Missouri. It appears that the alignment between Keystone pipeline miles 965-969 will pass near the Cuivre River. If the alignment occurs on the floodplain of Cuivre River, then surveys may be required regarding possible impacts to the plant. If potential habitat is present within the project area, the Service recommends that a survey be conducted by a botanist familiar with the species to determine the possible occurrence of this plant. Qualifications of the surveyor, method of survey, and results of the survey should be submitted to the Marion Illinois Sub-Office, 8588 Route 148, Marion, Illinois 62959 for review and a determination whether further section 7 consultation with the Service is necessary.

Topeka Shiner

The Topeka shiner (*Notropis topeka*), federally listed as endangered, is known to occur in South Dakota, Kansas, and Missouri where the two pipelines are proposed to cross. The Topeka shiner inhabits spring-fed, sandy-bottomed streams that have good water quality. The species lives in pools and slack water areas between riffle sequences along a stream course. The species is considered to be carnivorous and feeds on aquatic invertebrates. Stream

modifications, sediment deposition, pollution, overgrazing, and predation by introduced fish are thought to have led to the decline of the Topeka shiner across its Midwestern range.

Topeka Shiners can be impacted in one of two ways by a pipeline crossing. First are direct habitat impacts such as channel degradation or water quality impacts from increased sedimentation, which can also include riparian vegetation impacts. At a minimum, the project proponents should maintain and/or restore the riparian corridor with native vegetation, ensuring future filtering of surface runoff to the stream. Second, we recommend against any work that will impact the channel or its banks during the primary spawning season for the shiner; May 15-July 31 inclusive. At an informational meeting in Pierre, South Dakota on February 8, 2006, TransCanada pipeline representatives indicated that it is possible to bore under important habitats such as Topeka shiner streams. We recommend these Topeka shiner streams be crossed by using the directional boring techniques outlined at the February 8 meeting. Additionally, if the Topeka shiner streams cannot be bored, we recommend that erosion control measures be described and implemented as part of any request for Section 10/404 permit authorizations.

Topeka shiners are known to occupy numerous small streams within eastern South Dakota, and most are concentrated within the Big Sioux, Vermillion, and James River watersheds. Survey efforts continue to reveal additional inhabited streams.

Federally designated critical habitat occurs for the Topeka Shiner where the Keystone pipeline crosses North Elm Creek in Marshall County. Additionally, for the Cushing pipeline, Topeka shiner critical habitat occurs along in the following counties along the streams:

- Dickinson County; tributary to Carry Creek; CE 85
- Dickinson County; Carry Creek; CE 87
- Dickinson County; West Branch Lyon Creek; CE 92
- Marion County; Mud Creek; CE 114.

In Missouri, the proposed pipeline alignment will pass through Caldwell and Clinton counties. The Topeka shiner's historical range occurred in these two counties. It is believed that the fish no longer occurs in this part of its former range.

Critical habitat adverse modification may be addressed by the implementation of best management practices identified in Enclosure 2 to avoid impact to the habitat.

Western Prairie Fringed Orchid

The western prairie fringed orchid (*Platanthera praeclara*), federally listed as threatened, inhabits tall-grass calcareous silt loam or sub-irrigated sand prairies. Declines in western prairie fringed orchid populations have been caused by the drainage and conversion of its habitats to agricultural production, channelization, siltation, road and bridge construction, grazing, haying, and the application of herbicides. Along the proposed pipeline route, in Nebraska, populations are known to occur in Seward and Stanton counties with, and may occur at other sites in Nebraska. The western prairie fringed orchid has not recently been documented in South Dakota. However, the life cycle of the plant can make it difficult to detect, plus populations currently exist in the neighboring States of Nebraska, Minnesota and

North Dakota, and potential habitat may still be found in South Dakota, therefore potential exists for the orchid to be found in this State. In North Dakota, the orchid is found in Ransom County and on the Sheyenne National Grasslands, where the largest population in the United States is known to occur. If potential habitat is present within the project area, the Service recommends that a survey be conducted by a botanist familiar with the species during the flowering period (i.e., mid-June to mid-July) to determine the possible occurrence of this plant. Qualifications of the surveyor, method of survey, and results of the survey should be submitted to the appropriate Service State field office for review and a determination whether further section 7 consultation with the Service is necessary.

Whooping Crane

Whooping cranes *(Grus americanus)*, federally listed as endangered, use numerous habitats such as cropland and pastures; wet meadows; shallow marshes; shallow portions of rivers, lakes, reservoirs, and stock ponds; and both freshwater and alkaline basins for feeding and loafing during their spring and fall migration. Overnight roosting sites frequently require shallow water in which they stand and rest. shallow, sparsely vegetated streams and wetlands to feed and roost during migration. The north-south migrational corridor through Oklahoma, Kansas, Nebraska, South Dakota, and North Dakota is crossed by the two proposed pipelines. Migrating whooping cranes could be roosting or feeding in areas where the two pipelines are proposed to be constructed. The migration periods in general are from approximately March 23 through May 10 and from September 16 through November 16. Migration periods throughout the States involved may vary due to the northern or southern location during the migrational period. Alterations to feeding and roosting habitats, human disturbance, and depletions of instream flows to the Platte River in Colorado, Wyoming, and Nebraska have negative impacts on the whooping crane. Disturbance (flushing the birds) stresses them at critical times of the year. We recommend that you remain vigilant for these birds. There is little that can be done to reduce disturbance besides ceasing activity at sites where the birds have been observed. The birds normally do not stay in any one area for long during migration. If construction of the proposed pipeline occurs during either the spring or autumn migration and whooping cranes use areas within 1-mile of where pipeline construction is occurring, construction activities must cease immediately and the Service's respective State field office, including the Nebraska Field Office, (i.e., maintains the Cooperative Whooping Crane Tracking Project for the United States) must be notified to determine when construction can continue. Additionally, young adult whooping cranes are known to summer in North Dakota.

CANIDATE SPECIES

Dakota Skipper

The Dakota skipper (*Hesperia dacotae*), is a candidate species found in both North and South Dakota native prairies containing a high diversity of wildflowers and grasses. Habitats include two prairie types: 1) low (wet) prairie dominated by bluestem grasses, wood lily, harebell, and smooth camas; 2) upland (dry) prairie on ridges and hillsides dominated by bluestem grasses, needlegrass, pale purple and upright coneflowers and blanketflower. In North Dakota, the Dakota skipper occurs in Ransom and Sargent counties. In South Dakota, the Dakota skipper occurs in Brookings, Brown, Codington, Day, Deuel, Edmunds, Grant, Hamlin, Marshall,

McPherson, and Roberts Counties. Impacts to this species and its associate habitats should be avoided.

Eastern Massasauga

The eastern massasauga rattlesnake (*Sistrurus catenatus catenatus)*, is a federal candidate species and is known to occur in Bond and Fayette Counties, Illinois, in the vicinity of Carlyle Lake where it hibernates near the lake shoreline. In Missouri, the massasauga is known to occur in Chariton County. Massasaugas live in wet areas, including wet prairies, marshes and low areas along rivers and lakes. In many areas massasaugas also use adjacent uplands, including forest, during part of the year. They often hibernate in crayfish burrows but they may also be found under logs and tree roots or in small mammal burrows. Unlike other rattlesnakes, massasaugas hibernate along. Impacts to this species and its associate habitats should be avoided.

References

Buehler, D. A., T. J. Mersmann, J. D. Fraser, and J. K. D. Seegar. 1991. Effects of human activity on bald eagle distribution on the Northern Chesapeake Bay. Journal of Wildlife Management 55(2):282-290.

Greater Yellowstone Bald Eagle Working Group. 1996. Greater Yellowstone Bald Eagle Management Plan: 1995 Update. Greater Yellowstone Bald Eagle Working Group, Wyoming Game and Fish Department, Lander, Wyoming. 47 pp.

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Stalmaster, M. V. and J. R. Newman. 1978. Behavioral responses of wintering bald eagles to human activity. Journal of Wildlife Management 42(3):506-513.

U.S. Bureau of Land Management. 2003. Final Statewide Programmatic Bald Eagle Biological Assessment. Prepared for the Wyoming Bureau of Land Management by Greystone Consultants. August 2003. 266 pp. + Appendices.

U.S. Fish and Wildlife Service. 1986. Recovery Plan for the Pacific Bald Eagle. U.S. Fish and Wildlife Service, Portland, Oregon. 160 pp.

Enclosure 2

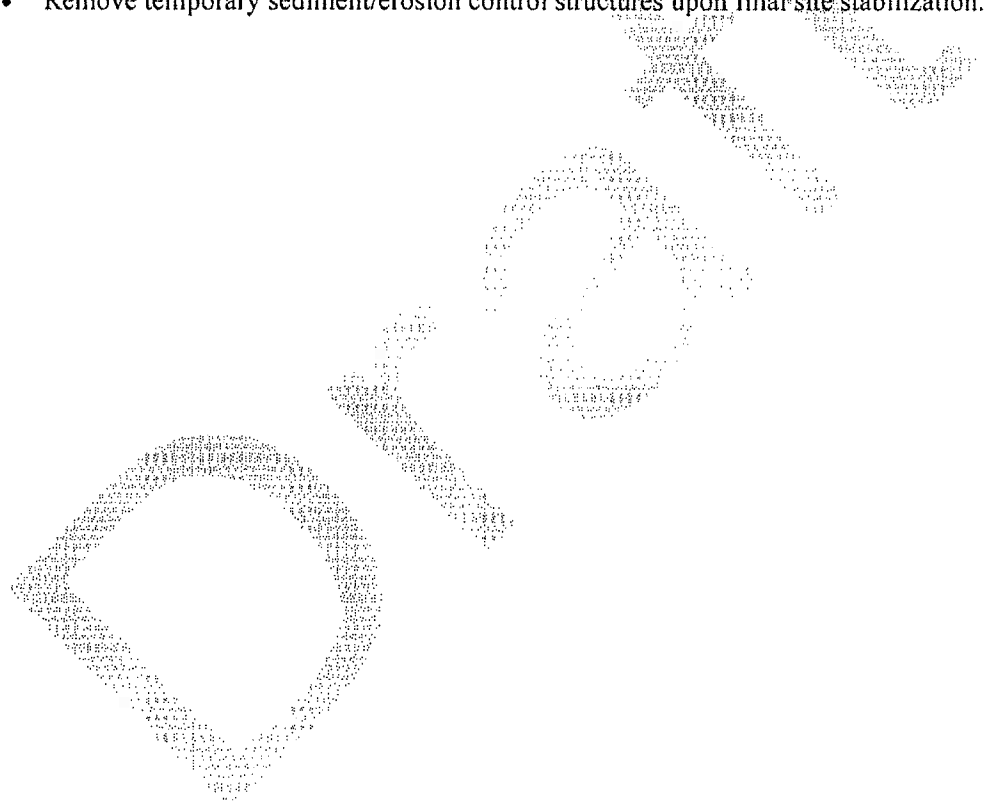
Recommended Best Management Practices for Proposed Pipeline Construction Activities

- Implement a sediment and erosion control plan using best management practices during construction such as a) the installation of sediment fencing and straw hay bales to capture sediment, and b) stock piling any excavated material well away from streams and wetlands so that the material cannot slough back into these areas.
- Monitor sediment/erosion control measures after precipitation events. Clean, repair, and replace structures as necessary.
- Monitor sediment/erosion control measures periodically throughout all phases of construction. Clean, repair, and replace structures as necessary.
- Establish staging areas for the crew, equipment, hazardous materials, chemicals, fuels, lubricating oils, etc., no closer than 300 feet of a stream bank or wetland.
- Install sediment and erosion controls around staging areas to prevent discharge from these sites.
- Store construction waste materials, debris, and excess materials well away from streams and wetlands.
- Refuel construction equipment at least 100 feet from stream banks and wetlands.
- Use the horizontal directional drilling method for proposed pipeline crossings of streams and wetlands, especially those streams which contain flowing water during project implementation to avoid impacts to these resources.

- If the directional drilling method would not be feasible, we recommend the following:

  - conduct stream crossings during a period of low stream flow (July to October)
  - limit tree trimming and cutting to only what it is necessary
  - limit access of construction equipment within the stream channel to one confined location, preferably over an existing bridge, equipment pads, clean temporary native rock fill, or over a temporary portable bridge
  - limit in-stream equipment to that needed to construct a crossing
  - do not alter or remove natural stream features such as riffles or pools
  - place trench spoil at least 10 feet away from stream banks
  - use sediment filter devices to prevent flow of spoil off the right-of-way
  - de-water the trench, as necessary, to prevent discharge of silt laden water into streams and wetlands during construction and backfilling operations
  - return the substrate and contours of the wetland and stream bank and bottom of the channel to pre-project conditions.
- Maintain natural stream features such as riffles or pools.
- Keep all machinery out of streams as much as possible.
- Limit the removal of riparian vegetation to only when it is necessary.
- Replace any woody riparian vegetation unavoidably lost by planting five trees for every tree lost. Only native riparian plants should be used to help prevent the spread of exotics.
- Leave a wide natural vegetated buffer area around any wetland (minimum 100 feet) and along any streams (minimum 100 feet) located on the project site.

- Re-vegetate all disturbed areas as soon as possible after construction using only native plants to reduce soil erosion. Annual species, such as rye or wheat, may initially be planted along with native species in areas subject to immediate soil loss, such as a steep slope, to provide rapid erosion control. Final re-vegetation should use native species only.
- Limit the use of fertilizers, herbicides, pesticides, or other chemicals to re-establish native vegetation and maintenance of pipeline right-of-ways. Application of chemicals should be no closer than 100 feet of streams and wetlands.
- Remove and dispose of all debris and excess construction materials properly upon project completion.
- Evaluate the establishment of vegetation after project completion and inspect all sediment control structures at one month intervals for at least 3 months. Retain sediment control structures until site stabilization is achieved; and
- Remove temporary sediment/erosion control structures upon final site stabilization.



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March 3, 2006

Mr. John Cochnar
Assistant Field Supervisor
Nebraska Ecological Services
203 West Second Street
Federal Building
Grand Island, NE 68801

RE: Transmittal of 1:100,000 scale maps of the Keystone Pipeline Project.

Dear Mr. Cochnar:

In response to our phone conversation, please find attached one set of hard copy maps of the entire proposed pipeline system. Also please find a cd that contains an electronic copy of the each map sheet. Please call if you have any difficulty opening and printing the electronic files.

We look forward to working with you and your staff in the coming months.

Sincerely Yours,

Scott Ellis
Project Manager

CONFIDENTIAL

January 24, 2006

ENSR
1601 Prospect Parkway
Fort Collins, CO 80525
tel 970.493.8878
fax 970.493.0213
email
cjohnson@ensr.aecom.com
web www.transcanada.com

Jeffrey Towner
Field Supervisor
U. S. Fish and Wildlife Service
North Dakota Field Office
3425 Miriam Avenue
Bismarck, ND 58501-7926

Dear Mr. Towner:

TransCanada is planning to construct and operate a 1,830-mile-long interstate crude oil transmission system from an oil supply hub near Hardisty, Alberta, Canada to destinations in the Midwestern United States (U.S). ENSR Corporation (ENSR) has been retained by TransCanada to prepare an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) for the proposed Keystone Pipeline Project (Project) within the U.S. In the U.S., the proposed Project would consist of approximately 1,070 miles of new pipeline constructed from the U.S.-Canada border in Pembina County, North Dakota to terminals and refineries in Salisbury (Chariton County), Missouri, Wood River (Madison County), and Patoka (Marion County), Illinois. TransCanada would construct the new pipeline within a temporary 110-foot-wide construction right-of-way (ROW). After construction and reclamation, the ROW would revert to a 60-foot-wide permanent ROW. TransCanada proposes to begin construction in the spring of 2008, with the system in-service by the end of 2009.

The Project also will require the construction of pump stations, valves, meters, and other ancillary facilities. The hydraulic characteristics of the pipeline will determine pump station and valve locations. The Project will meet all federal, state and local regulatory requirements and will implement an Integrity Management Program to help ensure public safety and to protect the environment. Flow meters and delivery metering stations will measure the amount of product transported and delivered to terminals. Electrical powerlines and facility upgrades will be required in some locations to provide power for the new pump stations and motor operated valves (MOVs) located along the pipeline route. Local power providers will be responsible for obtaining the necessary approvals and authorizations for any such construction.

National Environmental Policy Act Process

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The Department of State governs the issuance of Presidential Permits for crude oil pipelines across U.S. borders and will be the federal lead for the NEPA process. In evaluating the Presidential Permit application (including an EA), the Department of State will solicit the views of other federal agencies, including the Department of Interior. Based on public and agency input, the Department of State will review the EA to determine whether a Finding of No Significant Impact (FONSI) is appropriate or whether an Environmental Impact Statement must be prepared with respect to potential significant environmental impacts within the U.S. In addition to the NEPA process, the Department of State must comply with other requirements and regulations, including the Endangered Species Act.

Species Information Request

Enclosed is an overview map of the entire proposed route that traverses parts of North Dakota, South Dakota, Nebraska, Kansas, Missouri, and Illinois. In North Dakota, the Project will cross portions of Cavalier, Pembina, Walsh, Nelson, Steele, Barnes, Ransom, and Sargent counties (see attached Overview Map and CD with the Electronic Centerline).
In order to address potential impacts to aquatic and terrestrial plant and animal species, we are requesting species information for:

- Federally listed, proposed, and candidate species; and
- Designated critical habitat of federally listed species.

Where it appears that possible or probable concerns relative to sensitive species or habitats may occur, please indicate whether surveys might be required, as well as the preferred methodology and level of effort you would consider acceptable for the surveys. If appropriate, ENSR also would like to request that the USFWS designate a region project lead through the consultation process for the Project.

ENSR also is contacting the Service's South Dakota, Nebraska, Kansas, Missouri, and Illinois Ecological Field Offices to request sensitive species information along portions of the proposed Project route. In addition, ENSR is contacting the state wildlife offices and natural heritage programs for resource data and input on the proposed Keystone Project. If you have any questions regarding this request, please call me

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at (970) 493-8878. You also may direct project-related questions to the ENSR project manager, Scott Ellis, at the same number. Thank you in advance for your prompt response to this request.

Sincerely,

Charles Johnson
Senior Wildlife Biologist

CJ/

Ref: 10623-004

Enc. Overview Project Map
CD

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January 24, 2006

ENSR
1601 Prospect Parkway
Fort Collins, CO 80525
tel 970.493.8878
fax 970.493.0213
email
cjohnson@ensr.aecom.com
web www.transcanada.com

Pete Gober
Field Supervisor
U. S. Fish and Wildlife Service
South Dakota Field Office
420 S. Garfield Avenue, Suite 400
Pierre, SD 57501-5408

Dear Mr. Gober:

TransCanada is planning to construct and operate a 1,830-mile-long interstate crude oil transmission system from an oil supply hub near Hardisty, Alberta, Canada to destinations in the Midwestern United States (U.S). ENSR Corporation (ENSR) has been retained by TransCanada to prepare an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) for the proposed Keystone Pipeline Project (Project) within the U.S. In the U.S., the proposed Project would consist of approximately 1,070 miles of new pipeline constructed from the U.S.-Canada border in Pembina County, North Dakota to terminals and refineries in Salisbury (Chariton County), Missouri, Wood River (Madison County), and Patoka (Marion County), Illinois. TransCanada would construct the new pipeline within a temporary 110-foot-wide construction right-of-way (ROW). After construction and reclamation, the ROW would revert to a 60-foot-wide permanent ROW. TransCanada proposes to begin construction in the spring of 2008, with the system in-service by the end of 2009.

The Project also will require the construction of pump stations, valves, meters, and other ancillary facilities. The hydraulic characteristics of the pipeline will determine pump station and valve locations. The Project will meet all federal, state and local regulatory requirements and will implement an Integrity Management Program to help ensure public safety and to protect the environment. Flow meters and delivery metering stations will measure the amount of product transported and delivered to terminals. Electrical powerlines and facility upgrades will be required in some locations to provide power for the new pump stations and motor operated valves (MOVs) located along the pipeline route. Local power providers will be responsible for obtaining the necessary approvals and authorizations for any such construction.

National Environmental Policy Act Process

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Information Request

Enclosed is an overview map of the entire proposed route that traverses parts of North Dakota, South Dakota, Nebraska, Kansas, Missouri, and Illinois. In South Dakota, the Project will cross portions of Marshall, Day, Clark, Beadle, Kingsbury, Miner, Hanson, McCook, Hutchinson, and Yankton counties (see attached Overview Map and CD with the Electronic Centerline).

In order to address potential impacts to aquatic and terrestrial plant and animal species, we are requesting occurrence data for:

- Federally listed, proposed, and candidate species;
- Designated critical habitat of federally listed species;
- State listed or state sensitive species; and
- Unique ecosystems or sensitive communities.

Because of the mobility of wildlife species, ENSR would like to request sensitive wildlife information 5 miles beyond the Project boundary. We also would like to request sensitive plant data 3 miles beyond the Project boundary. If applicable, please send electronic files for our environmental analysis to: cjohnson@ensr.aecom.com.

ENSR also is contacting the U.S. Fish and Wildlife Service and South Dakota Game, Fish, and Parks to request sensitive species information and to obtain input regarding the proposed Project route in South Dakota. If you have any questions regarding this request, please call me at (970) 493-

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8878. You also may direct project-related questions to the ENSR project manager, Scott Ellis, at the same number. Thank you in advance for your prompt response to this request.

Sincerely,

Charles Johnson
Senior Wildlife Biologist

CJ/

Ref: 10623-004

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January 24, 2006

ENSR
1601 Prospect Parkway
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web www.transcanada.com

Steve Anschutz
Project Leader
U.S. Fish and Wildlife Service
Ecological Services Field Office
203 West Second Street
Federal Building, Second Floor
Grand Island, NE 68801

Dear Mr. Anschutz:

TransCanada is planning to construct and operate a 1,830-mile-long interstate crude oil transmission system from an oil supply hub near Hardisty, Alberta, Canada to destinations in the Midwestern United States (U.S). ENSR Corporation (ENSR) has been retained by TransCanada to prepare an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) for the proposed Keystone Pipeline Project (Project) within the U.S. In the U.S., the proposed Project would consist of approximately 1,070 miles of new pipeline constructed from the U.S.-Canada border in Pembina County, North Dakota to terminals and refineries in Salisbury (Chariton County), Missouri, Wood River (Madison County), and Patoka (Marion County), Illinois. TransCanada would construct the new pipeline within a temporary 110-foot-wide construction right-of-way (ROW). After construction and reclamation, the ROW would revert to a 60-foot-wide permanent ROW. TransCanada proposes to begin construction in the spring of 2008, with the system in-service by the end of 2009.

The Project also will require the construction of pump stations, valves, meters, and other ancillary facilities. The hydraulic characteristics of the pipeline will determine pump station and valve locations. The Project will meet all federal, state and local regulatory requirements and will implement an Integrity Management Program to help ensure public safety and to protect the environment. Flow meters and delivery metering stations will measure the amount of product transported and delivered to terminals. Electrical powerlines and facility upgrades will be required in some locations to provide power for the new pump stations and motor operated valves (MOVs) located along the pipeline route. Local power providers will be responsible for obtaining the necessary approvals and authorizations for any such construction.

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Species Information Request

Enclosed is an overview map of the entire proposed route that traverses parts of North Dakota, South Dakota, Nebraska, Kansas, Missouri, and Illinois. In Nebraska, the Project will cross portions of Cedar, Wayne, Stanton, Platte, Colfax, Butler, Seward, Saline, Jefferson, and Gage counties (see attached Overview Map and CD with the Electronic Centerline).

In order to address potential impacts to aquatic and terrestrial plant and animal species, we are requesting species information for:

- Federally listed, proposed, and candidate species; and
- Designated critical habitat of federally listed species.

Where it appears that possible or probable concerns relative to sensitive species or habitats may occur, please indicate whether surveys might be required, as well as the preferred methodology and level of effort you would consider acceptable for the surveys. If appropriate, ENSR also would like to request that the USFWS designate a region project lead through the consultation process for the Project.

ENSR also is contacting the Service's North Dakota, South Dakota, Kansas, Missouri, and Illinois Ecological Field Offices to request sensitive species information along portions of the proposed Project route. In addition, ENSR is contacting the state wildlife offices and natural

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heritage programs for resource data and input on the proposed Keystone Project. If you have any questions regarding this request, please call me at (970) 493-8878. You also may direct project-related questions to the ENSR project manager, Scott Ellis, at the same number. Thank you in advance for your prompt response to this request.

Sincerely,

Charles Johnson
Senior Wildlife Biologist

CJ/

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January 24, 2006

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web www.transcanada.com

Mike LeValley
Project Leader
U.S. Fish and Wildlife Service
Ecological Services Field Office
315 Houston Street, Suite E
Manhattan, KS 66502-6172

Dear Mr. LeValley:

TransCanada is planning to construct and operate a 1,830-mile-long interstate crude oil transmission system from an oil supply hub near Hardisty, Alberta, Canada to destinations in the Midwestern United States (U.S). ENSR Corporation (ENSR) has been retained by TransCanada to prepare an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) for the proposed Keystone Pipeline Project (Project) within the U.S. In the U.S., the proposed Project would consist of approximately 1,070 miles of new pipeline constructed from the U.S.-Canada border in Pembina County, North Dakota to terminals and refineries in Salisbury (Chariton County), Missouri, Wood River (Madison County), and Patoka (Marion County), Illinois. TransCanada would construct the new pipeline within a temporary 110-foot-wide construction right-of-way (ROW). After construction and reclamation, the ROW would revert to a 60-foot-wide permanent ROW. TransCanada proposes to begin construction in the spring of 2008, with the system in-service by the end of 2009.

The Project also will require the construction of pump stations, valves, meters, and other ancillary facilities. The hydraulic characteristics of the pipeline will determine pump station and valve locations. The Project will meet all federal, state and local regulatory requirements and will implement an Integrity Management Program to help ensure public safety and to protect the environment. Flow meters and delivery metering stations will measure the amount of product transported and delivered to terminals. Electrical powerlines and facility upgrades will be required in some locations to provide power for the new pump stations and motor operated valves (MOVs) located along the pipeline route. Local power providers will be responsible for obtaining the necessary approvals and authorizations for any such construction.

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Species Information Request

Enclosed is an overview map of the entire proposed route that traverses parts of North Dakota, South Dakota, Nebraska, Kansas, Missouri, and Illinois. In Kansas, the Project will cross portions of Marshall, Nemaha, Brown, and Doniphan counties (see attached Overview Map and CD with the Electronic Centerline).

In order to address potential impacts to aquatic and terrestrial plant and animal species, we are requesting species information for:

- Federally listed, proposed, and candidate species; and
- Designated critical habitat of federally listed species.

Where it appears that possible or probable concerns relative to sensitive species or habitats may occur, please indicate whether surveys might be required, as well as the preferred methodology and level of effort you would consider acceptable for the surveys. If appropriate, ENSR also would like to request that the USFWS designate a region project lead through the consultation process for the Project.

ENSR also is contacting the Service's North Dakota, South Dakota, Nebraska, Missouri, and Illinois Ecological Field Offices to request sensitive species information along portions of the proposed Project route. In addition, ENSR is contacting the state wildlife offices and natural heritage programs for resource data and input on the proposed Keystone

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Project. If you have any questions regarding this request, please call me at (970) 493-8878. You also may direct project-related questions to the ENSR project manager, Scott Ellis, at the same number. Thank you in advance for your prompt response to this request.

Sincerely,

Charles Johnson
Senior Wildlife Biologist

CJ/

Ref: 10623-004

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January 24, 2006

ENSR
1601 Prospect Parkway
Fort Collins, CO 80525
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fax 970.493.0213
email
cjohnson@ensr.aecom.com
web www.transcanada.com

Charlie Scott
Field Supervisor
U.S. Fish and Wildlife Service
Ecological Services Field Office
101 Park DeVille Drive, Suite A
Columbia, MO 65203-0057

Dear Mr. Scott:

TransCanada is planning to construct and operate a 1,830-mile-long interstate crude oil transmission system from an oil supply hub near Hardisty, Alberta, Canada to destinations in the Midwestern United States (U.S). ENSR Corporation (ENSR) has been retained by TransCanada to prepare an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) for the proposed Keystone Pipeline Project (Project) within the U.S. In the U.S., the proposed Project would consist of approximately 1,070 miles of new pipeline constructed from the U.S.-Canada border in Pembina County, North Dakota to terminals and refineries in Salisbury (Chariton County), Missouri, Wood River (Madison County), and Patoka (Marion County), Illinois. TransCanada would construct the new pipeline within a temporary 110-foot-wide construction right-of-way (ROW). After construction and reclamation, the ROW would revert to a 60-foot-wide permanent ROW. TransCanada proposes to begin construction in the spring of 2008, with the system in-service by the end of 2009.

The Project also will require the construction of pump stations, valves, meters, and other ancillary facilities. The hydraulic characteristics of the pipeline will determine pump station and valve locations. The Project will meet all federal, state and local regulatory requirements and will implement an Integrity Management Program to help ensure public safety and to protect the environment. Flow meters and delivery metering stations will measure the amount of product transported and delivered to terminals. Electrical powerlines and facility upgrades will be required in some locations to provide power for the new pump stations and motor operated valves (MOVs) located along the pipeline route. Local power providers will be responsible for obtaining the necessary approvals and authorizations for any such construction.

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Species Information Request

Enclosed is an overview map of the entire proposed route that traverses parts of North Dakota, South Dakota, Nebraska, Kansas, Missouri, and Illinois. In Missouri, the Project will cross portions of Buchanan, Clinton, Caldwell, Carroll, Chariton, Randolph, Audrain, Montgomery, Lincoln, and St. Charles counties (see attached Overview Map and CD with the Electronic Centerline).

In order to address potential impacts to aquatic and terrestrial plant and animal species, we are requesting species information for:

- Federally listed, proposed, and candidate species; and
- Designated critical habitat of federally listed species.

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ENSR also is contacting the Service's North Dakota, South Dakota, Nebraska, Kansas, and Illinois Ecological Field Offices to request sensitive species information along portions of the proposed Project route. In addition, ENSR is contacting the state wildlife offices and natural heritage programs for

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resource data and input on the proposed Keystone Project. If you have any questions regarding this request, please call me at (970) 493-8878. You also may direct project-related questions to the ENSR project manager, Scott Ellis, at the same number. Thank you in advance for your prompt response to this request.

Sincerely,

Charles Johnson
Senior Wildlife Biologist

CJ/

Ref: 10623-004

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January 24, 2006

ENSR
1601 Prospect Parkway
Fort Collins, CO 80525
tel 970.493.8878
fax 970.493.0213
email
cjohnson@ensr.aecom.com
web www.transcanada.com

Joyce Collins
Assistant Field Supervisor
U. S. Fish and Wildlife Service
Marion Ecological Services Sub-office
8588 Route 148
Marion, IL 62959-4565

Dear Ms. Collins:

TransCanada is planning to construct and operate a 1,830-mile-long interstate crude oil transmission system from an oil supply hub near Hardisty, Alberta, Canada to destinations in the Midwestern United States (U.S.). ENSR Corporation (ENSR) has been retained by TransCanada to prepare an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) for the proposed Keystone Pipeline Project (Project) within the U.S. In the U.S., the proposed Project would consist of approximately 1,070 miles of new pipeline constructed from the U.S.-Canada border in Pembina County, North Dakota to terminals and refineries in Salisbury (Chariton County), Missouri, Wood River (Madison County), and Patoka (Marion County), Illinois. TransCanada would construct the new pipeline within a temporary 110-foot-wide construction right-of-way (ROW). After construction and reclamation, the ROW would revert to a 60-foot-wide permanent ROW. TransCanada proposes to begin construction in the spring of 2008, with the system in-service by the end of 2009.

The Project also will require the construction of pump stations, valves, meters, and other ancillary facilities. The hydraulic characteristics of the pipeline will determine pump station and valve locations. The Project will meet all federal, state and local regulatory requirements and will implement an Integrity Management Program to help ensure public safety and to protect the environment. Flow meters and delivery metering stations will measure the amount of product transported and delivered to terminals. Electrical powerlines and facility upgrades will be required in some locations to provide power for the new pump stations and motor operated valves (MOVs) located along the pipeline route. Local power providers will be responsible for obtaining the necessary approvals and authorizations for any such construction.

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Species Information Request

Enclosed is an overview map of the entire proposed route that traverses parts of North Dakota, South Dakota, Nebraska, Kansas, Missouri, and Illinois. In Illinois, the Project will cross portions of Madison, Bond, Fayette, and Marion counties (see attached Overview Map and CD with the Electronic Centerline).

In order to address potential impacts to aquatic and terrestrial plant and animal species, we are requesting species information for:

- Federally listed, proposed, and candidate species; and
- Designated critical habitat of federally listed species.

Where it appears that possible or probable concerns relative to sensitive species or habitats may occur, please indicate whether surveys might be required, as well as the preferred methodology and level of effort you would consider acceptable for the surveys. If appropriate, ENSR also would like to request that the USFWS designate a region project lead through the consultation process for the Project.

ENSR also is contacting the Service's North Dakota, South Dakota, Nebraska, Kansas, and Missouri Ecological Field Offices to request sensitive species information along portions of the proposed Project route. In addition, ENSR is contacting the state wildlife offices and natural heritage programs for resource data and input on the proposed Keystone Project. If you have any

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questions regarding this request, please call me at (970) 493-8878. You also may direct project-related questions to the ENSR project manager, Scott Ellis, at the same number. Thank you in advance for your prompt response to this request.

Sincerely,

Charles Johnson
Senior Wildlife Biologist

CJ/

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