

**Stribley, Sara**

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**From:** Stribley, Sara  
**Sent:** Monday, March 05, 2007 2:03 PM  
**To:** 'Joel.Jorgensen@ngpc.ne.gov'  
**Subject:** Keystone Pipeline Project ENSR - piping plover and least tern survey protocols  
**Attachments:** Piping Plover and Interior Least Tern Survey Protocol.doc

Hi Joel,  
ENSR will be conducting piping plover and least tern surveys this summer during the breeding season for the Keystone Pipeline Project. I have attached the survey protocol that ENSR is planning on using for your review and feedback. Please let me know if this protocol incorporates everything that is needed to conduct the surveys appropriately.  
Thanks,  
Sara

Sara Stribley  
Environmental Coordinator  
ENSR | AECOM  
1601 Prospect Pkwy  
Ft. Collins, Colorado 80525  
P: 970.493.8878  
F: 970.4930213  
[sstribley@ensr.aecom.com](mailto:sstribley@ensr.aecom.com)  
[www.ensr.aecom.com](http://www.ensr.aecom.com)

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## Piping Plover and Interior Least Tern Survey Protocol

1. Surveys will be conducted from 15-April to 15-Sept. at the Missouri, Elkhorn, and Platte river crossings. Surveys will extend 0.25-mile from the construction right-of-way.
2. Surveys will be conducted by a biologist familiar with the species and familiar with identifying tern and plover nests.
3. Surveys will be conducted from sunrise to approximately 1000, or approximately 1700 to sunset???
4. All plovers or terns located within the survey area will be observed long enough to determine if the area is occupied by these species and if a nest is present.
5. Observations of plovers and terns will be recorded using GPS. Date, time, observations, and habitat type will be recorded for each sighting.
6. Surveys will not be conducted in poor weather (i.e., high wind, precipitation, etc)
7. During the 2008 pre-construction surveys, If an active nest is located, a 0.25-mile buffer area will be established to prevent direct loss of the nest, or indirect impacts from human-related disturbance. If an active nest is found in the survey area, the planned activity will be delayed at least 37 days, or seven days post-hatching. If a brood of flightless chicks is observed, activities will be delayed at least seven days.
8. Initiation of the project will occur as near to completion of the survey as possible.
9. Qualifications of the surveyor, method of survey, and results of the survey will be submitted to the NGPC and the appropriate USFWS field office.

**Stribley, Sara**

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**From:** Stribley, Sara  
**Sent:** Monday, March 05, 2007 1:17 PM  
**To:** 'sam.wilson@ngpc.ne.gov'  
**Subject:** Keystone Pipeline Project - River Otter Surveys  
**Attachments:** River Otter Survey Protocol.doc

Hi Sam,  
I've attached the river otter survey protocol that ENSR is planning on using for surveys, and was hoping to get your feedback and input on it. ENSR is planning on conducting river otter surveys this summer, during the denning season, at the Platte and Elkhorn rivers. I want to make sure that our survey efforts capture all of the necessary information. Any input or more specific details you can provide would be greatly appreciated!  
Thanks,  
Sara

Sara Stribley  
Environmental Coordinator  
ENSR | AECOM  
1601 Prospect Pkwy  
Ft. Collins, Colorado 80525  
P: 970.493.8878  
F: 970.4930213  
[sstribley@ensr.aecom.com](mailto:sstribley@ensr.aecom.com)  
[www.ensr.aecom.com](http://www.ensr.aecom.com)

## River Otter Survey Protocol

1. A survey for den sites will be conducted at the Platte and Elkhorn rivers during the river otter denning season (March – September).
2. Observations will be made primarily for river otters and dens, but will also include searching for other indicators such as:
  - a. feeding stations
  - b. slides
  - c. tracks
  - d. scat
3. One foot survey will be conducted ¼-mile upstream and downstream of the pipeline crossing, on both sides of the river bank.
4. Survey enter and exit GPS coordinates will be taken. Additionally, GPS coordinates will be taken at all areas where observations of river otters or river otter indicators are identified.
5. Results of the survey will be sent to Sam Wilson with the Nebraska Game and Parks Commission.

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## TransCanada – Keystone Pipeline Contact Summary Form

Location of Meeting ENSR

Date/Time of Meeting March 5, 2007

Keystone Team Member(s) Sara Stribley

### Contact Information:

Name	Mike Fritz
Title	Herpetologist
Organization	Nebraska Game and Parks Commission
Address	
County	
Phone	402-471-5419
E-mail address	<a href="mailto:Mike.Fritz@ngpc.ne.gov">Mike.Fritz@ngpc.ne.gov</a>

### Meeting Information:

Type of Contact (phone, in-person, etc.): Phone

Issue: Scientific Collector's Permit

Concern Level: High  Moderate  Low

### Description:

I spoke with Mike Fritz regarding the Nebraska scientific collections permit. Mike stated that any individuals surveying in the field must have a scientific collections permit, if they are surveying for state listed species, other state regulated species (example: piping plover, tern, massasauga, river otter), or any species located on state game and parks commission property. The lead field member must have a permit, however; GPS technicians or other field members do not need a permit, as long as they are working directly with the lead field member. Multiple species can be included on a permit, as long as the surveyor is the same person. Nebraska does not have any other T&E permits, such as permits for take. The NGPC will follow avoidance, minimization, and mitigation. Mike did remind me that we would need a federal permit for any surveys for federally listed species. Mike said that the Nebraska collections permit can be applied for online at: [www.ngpc.state.ne.us/wildlife/programs/sep/request.asp](http://www.ngpc.state.ne.us/wildlife/programs/sep/request.asp). Mike also requested that we email him a description of the surveys before the surveys are conducted.

**Stribley, Sara**

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**From:** Castle, Carla  
**Sent:** Monday, February 26, 2007 11:17 AM  
**To:** Carey.Grell@ngpc.ne.gov; John\_Cochnar@fws.gov; Krystal.Stoner@ngpc.ne.gov  
**Cc:** Johnson, Charlie; Stribley, Sara  
**Subject:** Keystone Pipeline Meeting Minutes  
**Attachments:** USFWS\_NGPC Minutes 020507D.doc

Thank you for meeting with ENSR representatives for the Keystone Pipeline Project on February 5, 2007. Please find attached the Draft Minutes for your review. Please reply to all in this e-mail with comments. The meeting minutes will be finalized and posted to the Keystone Sharepoint website on Thursday, March 1<sup>st</sup>. Thank you for your time.

Janie Castle  
Project Coordinator  
ENSR  
1601 Prospect Parkway  
Fort Collins, CO 80525  
T (970) 493-8878  
F (970) 493-0213  
ccastle@ensr.aecom.com

3/9/2007

## **Draft - U.S. Fish and Wildlife Service / Nebraska Game and Parks Commission; Nebraska U.S. Fish and Wildlife Service Field Office, Grand Island, NE**

**Monday, February 05, 2007, 9:30am – 12:00pm**

### **Attendees:**

John Cochran (USFWS)  
Carey Grell (NGPC)  
Krystal Stoner (NGPC)  
Charles Johnson (ENSR)  
Sara Stribley (ENSR)

### **Meeting Objectives**

ENSR met with the USFWS and NGPC to discuss issues pertaining to wildlife and special status species that have been identified for the Project. The goal of this discussion was to: 1) discuss the 2006 survey results for federally listed and candidate species, and state-listed species; 2) obtain concurrence on the proposed 2007 survey protocols and survey locations; 3) discuss the USFWS' position on the MBTA as it applies to the Project to date; and 4) discuss other issues or concerns that USFWS or NGPC have regarding the Project.

### **Project Update and Overview**

ENSR provided a brief overview of the Project on behalf of Kristal Stoner (NGPC's new T&E lead). ENSR indicated that since the last meeting in 2006, several re-routes have been identified and are currently being evaluated, including the Hecla reroute. ENSR indicated that discussions with the USFWS regarding the Hecla reroute are ongoing and that meetings are planned for February.

In addition to the Mainline portion of the Project, ENSR indicated that they are currently evaluating habitat for special status species along the Cushing Extension. Surveys for special status species habitat and occurrence along the Cushing extension will occur in 2007, in coordination with federal and state agencies.

### **Water Withdrawal from Platte River Drainage**

Consult with individual states regarding potential water withdrawal from the Platte River Drainage. Water withdrawal would result in a streamline consultation process.

Critical period for water withdrawal in the Lower Platte region (Columbus, NE to the Missouri River) is February 1 through July 31.

### **Biological Survey Report Review**

#### Topeka Shiner Report – SD, KS, MO

ENSR provided a synopsis of the results of the South Dakota, Kansas, and Missouri Topeka shiner reports.

#### South Dakota

The SD-USFWS is comfortable with the results of the habitat surveys that were conducted in SD. As mentioned in the SD Topeka shiner report, 5 sites were identified as having suitable habitat for the species. ENSR will follow up with the SD-USFWS (Charlene Bessken) to verify the 5 sites that would be surveyed for the presence of Topeka shiner in 2007.

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The USFWS recommends using Best Management Practices (BMP) that was provided by the USFWS in order to minimize potential impacts to this species. These BMPs will be provided by Charlene Bessken.

## Kansas

ENSR discussed the e-mail from Nate Davis (KDWP) regarding his formal response to the Topeka shiner survey report for Kansas. This e-mail was also distributed to Vernon Tabor (KS-USFWS; aquatic specialist) who has been involved in project discussions through John Cochnar. John is comfortable with the discussion regarding sampling/ relocate efforts prior to construction and that further survey efforts at unnamed tributaries to North Elm Creek would not be required since suitable hydrology is not likely to be present (i.e., marginal habitat – as described in the report). ENSR will check the location of the 2 unnamed tributaries to North Elm Creek relative to critical habitat for this species.

As a result, only two sites that occur within critical habitat in Kansas will require sampling/ relocation efforts prior to construction. The USFWS will defer to the KDWP on decisions regarding Topeka shiner surveys in Kansas.

John will provide e-mail from Vernon Tabor regarding the Topeka shiner survey report. Vernon also suggested in his email to follow the Kansas BMPs for stream crossings.

## Missouri

John has not heard anything from the MO-USFWS regarding the Topeka shiner. ENSR indicated that they will follow up with the MO-USFWS, as well as with MDC regarding the Topeka shiner survey report.

## Mussel Survey Report (Higgins eye pearly mussel/ Scaleshell mussel/ Winged mapleleaf)-James River, South Dakota

The USFWS is comfortable with the results and findings from the mussel survey report.

## Grassland Survey Report (Dakota skipper/ Western prairie fringed orchid) – ND, SD

The USFWS is comfortable with the results and findings from the grassland survey report. ENSR indicated that additional sites in North Dakota and Nebraska will be surveyed in 2007. The NGPC will review the grassland report and data-base for known native grassland habitat within the project area. ENSR also will check NGPC data-base information.

## Raptor Survey Report

The USFWS is comfortable with the results and findings from the raptor survey report. ENSR indicated that bald eagle winter roost surveys/nest surveys and raptor surveys are currently underway. The USFWS is comfortable with the survey protocols that have been established for these aerial surveys. The USFWS also verbalized that they have reviewed the list of proposed bald eagle survey locations sent to them in December 2006. The list of survey locations looked appropriate, except that the Salt Fork Arkansas River should be added to the list of bald eagle survey locations. ENSR indicated that the Salt Fork Arkansas River crossing was added to the survey list after it was sent to the USFWS for their initial review, and that the river crossing will be surveyed.

## Indiana Bat Survey Report – MO, IL

John is deferring the report concurrence and the consultation process relative to the development of applicable conservation measures for this species to the respective MO and IL USFWS field offices.

## **2007 Special Status Species Survey Plan**

John Cochnar forwarded the special status species survey plan to all state USFWS representatives. All representatives have responded except for Missouri. John will follow up with Missouri. Few comments were received.



## Dakota skipper

ENSR indicated that based on the February 2, meeting with SDGFP, the survey window for Dakota skipper should be changed to July 1 – July 15. John stated that avoiding Dakota skipper habitat is the best way to protect the species.

## Topeka shiner

As discussed above for Topeka shiner, 5 sites were identified as having suitable habitat for the species. ENSR will follow up with the SD-USFWS (Charleen Bessken) to verify the 5 sites that would be surveyed for the presence of Topeka shiner in 2007 and specific methodology that would be used.

## Western prairie fringed orchid/ Small-white lady slipper

If no plants are found during the scheduled 2007 occurrence surveys, repeat surveys in 2008 if construction has not occurred in areas prior to the flowering period for these plants.

## Bald Eagle

During construction in 2008, John recommended that a biological monitor inspect the ROW and surrounding areas for eagle nests. If a nest is discovered, the FWS should be consulted and a site inspection can be made. Recommendations for mitigation will be based on the site inspection and will vary depending on topography, vegetative buffer, etc. The nest protection buffer can vary between 0.5-1.0 miles. There is generally no nest buffer protection required for an inactive bald eagle nest.

## **Migratory Bird Treaty Act**

The USFWS indicated that as discussed in previous meetings, the DOT is dealing with a very similar issue regarding the MBTA. However, because this is a migratory bird issue, not a law enforcement issue, not everyone is in agreement relative to how the MBTA should be enforced.

Based on the MBTA, issuance of Special Permit 2227 for take can be authorized if there is an ecological significance (such as mitigation) to migratory birds. However, the migratory bird office indicated that they will no longer issue a take permit, even from the Washington Office.

## Current Plan

The Regional Director (Region 6) is preparing a letter with input from other Regional Directors to the pipeline companies (Keystone and REX). The letter will probably be sent to the Washington Office for review, prior to distribution, but will likely be signed by the Regional Directors. The letter will indicate that the companies are doing everything they can to avoid and mitigate take, which would give them a Letter of Exemption under the MBTA. The Letter also may include language regarding the development of a conservation plan to offset impacts to migratory birds. This plan could include potential compensation banking opportunities by the companies in order to offset the loss of native habitats from the projects (e.g., 2:1 for riparian loss), as well as additional mitigation that would be used to offset loss of nests is currently being discussed.

John asked that ENSR prepare a table indicating acreage of native habitats that would be lost, including type of habitat (e.g., riparian, wetland, shrubland, forest, grassland, etc.) by state for both projects.

## **Mitigation Measures**

### Topekas shiner

The SD-USFWS (Charlene Bessken) provided BMPs that should be implemented at stream crossing along the project route in order to minimize potential impacts to aquatic species, including Topeka shiner.

## Dakota skipper

BMPs for the Dakota skipper will be provided by the USFWS to minimize potential impacts to this species. Mitigation measures may include minimization of disturbance within suitable habitat, reestablishment of native species, segregation of topsoil, etc.

## Western prairie fringed orchid/ Small-white lady slipper

If no plants are found during the scheduled 2007 occurrence surveys, repeat surveys in 2008 if construction has not occurred in areas prior to the flowering period for these plants.

If plants are located in the ROW in 2007 or 2008, coordinate FWS and state wildlife department to determine potential mitigation. Because there is no take provision for federally listed plants on private lands, potential mitigation measures (e.g., move plants, collect plants for herbarium, etc.) would be discussed through coordination with the federal and state agencies, if a population is found.

John recommended avoiding construction that would drain wetlands, applying seep collars on pipes, and maintaining elevations, to protect their wetland habitat.

## **Action Items**

### North Dakota

The ND-USFWS asked that ENSR verify easement areas that would be crossed (update). Follow up with Terry Ellsworth (USFWS).

### South Dakota

The USFWS to provide BMPs for the Dakota skipper to minimize potential impacts to this species.

### Nebraska

NGPC to verify monitoring provisions for the massasauga during construction.

ENSR will contact Sam Wilson (NGPC) regarding river otter survey protocol and biologists that could conduct the surveys.

NGPC to provide comments on the sign-off sheet for the 2007 surveys.

ENSR to incorporate comments into the survey protocols.

ENSR to contact Mike Fritz regarding Scientific Collection Permits in the event that state-listed species taken or moved.

ENSR to email John Cochnar updated correspondence regarding federal easement crossings.

### Oklahoma

John Cochnar to contact OK-USFWS regarding the need to address the Arkansas River Shiner at the Cimarron River.

**ENSR**

1601 Prospect Parkway, Fort Collins, Colorado 80525  
T 970.493.8878 F 970.493.0213 [www.ensr.aecom.com](http://www.ensr.aecom.com)

February 21, 2007

Carey Grell  
Nebraska Game and Parks Commission  
2200 N. 33rd Street  
Lincoln, NE 68503-0370

Dear Ms. Grell:

ENSR Corporation (ENSR) is providing you with a revised 2007 biological survey schedule and revised 2007 biological survey protocols, based off of our meeting in Grand Island, Nebraska, on Monday, February 5, 2007. Please review the amended documents, and return the enclosed concurrence forms at your earliest convenience.

Copies of these revised materials will also be sent to John Cochnar (Nebraska USFWS – Project Lead). If you have any questions regarding the enclosed materials, please contact me at (970) 493-8878 ext. 181 or email [cjohnson@ensr.aecom.com](mailto:cjohnson@ensr.aecom.com).

Sincerely,



Charles Johnson  
Senior Wildlife Biologist

CJ/ss

Ref: 10623-004

Enc: Proposed Threatened and Endangered Species Survey Schedule - Revised  
Survey Protocols - Revised





**Keystone Pipeline Project  
Proposed Survey Schedule for Nebraska – Mainline & Cushing Extension  
2006-2007**

Completed 2006 Surveys					
Species & Status	Approximate Survey Dates	Specific Survey Areas (by County & MP)	Survey Description	Surveyor	Comments
Raptors	April 26-May 2, 2006	MP: 436-649.3 (Cedar, Wayne, Stanton, Platte, Colfax, Butler, Seward, Saline, Jefferson, Gage counties)	An aerial survey was conducted to identify raptor nest sites and breeding territories within at least 0.25 miles of the proposed ROW.	Karen Caddis, Charles Johnson – ENSR Senior Wildlife Biologists	

Proposed 2007 Surveys					
Species & Status	Approximate Survey Dates	Specific Survey Areas (by County & MP)	Survey Description	Surveyor	Comments
River otter <i>Lontra Canadensis</i> NE-T	Denning season: March through September	Colfax: 542 (Platte River) Stanton: 502 (Elkhorn River)	One survey will be conducted for den sites within 0.25-mile upstream and downstream of the river crossings on both sides of the river bank.	Qualified ENSR biologist and/or contractor.	See attached survey protocol.
Bald eagle <i>Haliaeetus leucocephalus</i> FT; NE-T	January/February	Cedar: 436 (Missouri River) Colfax: 542 (Platte River) Stanton: 502 (Elkhorn River)	Aerial survey to locate winter roosts and eagle nests along major river crossings in ROW. Survey will be conducted 1-mile from the construction ROW.	Mike Phelan, Karen Caddis – ENSR wildlife biologists	See attached survey protocol.  2008 pre-construction surveys will not be required if construction occurs outside of the breeding/winter roost seasons for this species.
Raptors	January/February	MP: 436-649.3 (Cedar, Wayne, Stanton, Platte, Colfax, Butler, Seward, Saline, Jefferson, Gage counties)	Aerial survey to locate nest sites within the ROW.	Qualified ENSR biologist and/or contractor.	See attached survey protocol.  2008 pre-construction surveys will not be required

**Keystone Pipeline Project  
Proposed Survey Schedule for Nebraska – Mainline & Cushing Extension  
2006-2007**

Proposed 2007 Surveys					
Species & Status	Approximate Survey Dates	Specific Survey Areas (by County & MP)	Survey Description	Surveyor	Comments
<b>Interior Least Tern</b> <i>Sterna antillarum</i> <i>athalassos</i> FE; NE-E  <b>Piping Plover</b> <i>Charadrius melodus</i> FT; NE-T	Nesting period: 15-April to 15-Sept.	Cedar: 436 (Missouri River). Colfax: 542 (Platte River). Stanton: 502 (Elkhorn River).	One ground survey or aerial survey conducted 0.25 from the construction ROW.	Qualified ENSR biologist and/or contractor.	if construction occurs outside of the breeding season. See attached survey protocol. 2008 pre-construction surveys will not be required if construction occurs outside of the breeding season.
<b>Western fringed orchid</b> <i>Platanthera praeclara</i> FT; NE-T	Flowering period: 15-June to 15-July.	Butler: 548.1-548.2, 564.4-564.7 Cedar: 436.0-436.1 Colfax: 540.9-541.2 Jefferson: 622.2-622.4, 635.1-636.8, 637.0-637.4 Saline: 594.8-595.1, 606.4-606.5 Stanton: 503.4-503.5	One survey will be conducted during the flowering period to determine presence within the construction ROW.	Qualified ENSR biologist and/or contractor	See attached survey protocol. If no plants are found during 2007 surveys, 2008 surveys should be conducted if construction has not occurred in areas prior to the flowering period.
<b>Small white lady's slipper</b> <i>Cypripedium candidum</i> NE-T	Flowering period: 15-May to 7-June.	Butler: 548.1-548.2, 564.4-564.7 Cedar: 436.0-436.1 Colfax: 540.9-541.2 Jefferson: 622.2-622.4, 635.1-636.8, 637.0-637.4	One survey will be conducted during the flowering period to determine presence within the construction ROW.	Qualified ENSR biologist and/or contractor	See attached survey protocol. If no plants are found during 2007 surveys, 2008 surveys should be conducted if

Keystone Pipeline Project  
 Proposed Survey Schedule for Nebraska – Mainline & Cushing Extension  
 2006-2007

Proposed 2007 Surveys					
Species & Status	Approximate Survey Dates	Specific Survey Areas (by County & MP)	Survey Description	Surveyor	Comments
		Saline: 594.8-595.1, 606.4-606.5 Stanton: 503.4-503.5			construction has not occurred in areas prior to the flowering period.



**Keystone Pipeline Project – Mainline & Cushing Extension  
Survey Protocols for Nebraska Special Status Species**

Species & Status	Survey Protocol
<p><b>River Otter</b> <i>Lontra Canadensis</i> NE-T</p>	<p><b>Survey Frequency:</b> Surveys will be conducted in 2007 at the crossing of the Elkhorn and Platte Rivers during the river otter denning season (March through September). Surveys may also be required prior to construction in 2008, if pipeline construction occurs during the denning season.</p> <p><b>Procedures:</b></p> <ol style="list-style-type: none"> <li>1. Surveys will be conducted by a qualified biologist at the Elkhorn and Platte river crossings.</li> <li>2. Surveys will be conducted for den sites within 0.25-mile upstream and downstream of the river crossing on both sides of the river bank.</li> <li>3. Observations of river otters or dens will be recorded using GPS. Date, time, number otters/dens, land use and/or habitat type will be recorded for each sighting.</li> <li>4. Results of the survey will be sent to the NEGPC to determine if actions are needed to avoid impacts to the river otter.</li> </ol>
<p><b>Bald Eagle</b> <i>Haliaeetus leucoccephalus</i> FT, NE-T</p>	<p><b>Survey Frequency:</b> Aerial bald eagle surveys will be conducted for nest sites and winter roost sites in 2007. Surveys may also be required prior to construction in 2008, if pipeline construction occurs during the breeding season (1-February through 15-August) or winter roosting season (1-November through 1-April).</p> <p><b>Procedures:</b></p> <ol style="list-style-type: none"> <li>1. The bald eagle surveys will be conducted along river corridors or historical bald eagle nest/winter roosting sites that occur within 1-mile from the project Right-of-Way (ROW). Stands of coniferous or deciduous trees will be surveyed for active nest sites during the breeding season</li> <li>2. Stands of coniferous or deciduous trees will be surveyed for active winter roost sites from 1 hour before sunrise or sunset to 1 hour after sunrise or sunset.</li> <li>3. A helicopter will be used for the surveys. Whenever possible, two observers will be used to conduct the surveys.</li> <li>4. Observations of bald eagles, nests, or roosting eagles will be recorded using Global Positioning Systems (GPS). The date, location, nest condition, activity status, nest condition, and habitat will be recorded for each sighting.</li> </ol>

**Keystone Pipeline Project – Mainline & Cushing Extension  
Survey Protocols for Nebraska Special Status Species**

Species & Status	Survey Protocol
	<p>5. Qualifications of the surveyor, method of survey, and results of the survey will be submitted to the NEGPC and the appropriate U.S. Fish and Wildlife Service (USFWS) field office.</p> <p><b>Nest and Winter Roost Site Buffer Requirements:</b></p> <ol style="list-style-type: none"> <li>1. Restrict construction activities within 1-mile from bald eagle nests from February 1 through August 15, unless permitted by the USFWS.</li> <li>2. Restrict construction activities within 1-mile from bald eagle communal winter roosts from November 1 through April 1, unless permitted by the USFWS.</li> <li>3. Habitat altering activities should be prohibited within 0.5-mile of active roost sites year round.</li> </ol>
<p><b>Raptors</b></p>	<p><b>Survey Frequency:</b> A raptor survey (aerial helicopter survey) was conducted within 0.25- to 0.50-mile from the edge of the construction ROW in April of 2006, to identify active and inactive nest sites along the project route. A raptor report was submitted to the USFWS in December 2006.</p> <p>A second raptor survey effort will be conducted prior to leaf-out in the spring of 2007. The focus of this survey is to identify nest sites that would be directly impacted from construction activities.</p> <p><b>Procedures:</b></p> <ol style="list-style-type: none"> <li>1. Raptor surveys will be conducted along the entire proposed Project route, focusing on active and inactive nest sites that occur within the construction ROW.</li> <li>2. A helicopter will be used for the raptor surveys. Whenever possible, two observers will be used to conduct the surveys.</li> <li>3. Observations of raptors and nest sites will be recorded using GPS. The date, location, nest condition, activity status, raptor species, and habitat will be recorded for each sighting.</li> <li>4. Qualifications of the surveyor, method of survey, and results of the survey will be submitted to the NEGPC and the appropriate USFWS field office.</li> </ol>
<p><b>Interior Least Tern</b></p>	<p><b>Survey Frequency:</b> Surveys will be conducted in 2007 at the Missouri, Elkhorn and Platte river crossings during the</p>

**Keystone Pipeline Project – Mainline & Cushing Extension  
Survey Protocols for Nebraska Special Status Species**

<b>Species &amp; Status</b>	<b>Survey Protocol</b>
<p><i>Sterna antillarum</i> <i>athalassos</i> FE; NE-E</p> <p><b>Piping Plover</b> <i>Charadrius melodus</i> FT; NE-T</p>	<p>breeding season (15-April to 15-September) to identify occupied nest sites. Surveys may also be required prior to construction in 2008, if pipeline construction occurs during the breeding season.</p> <p><b>Procedures:</b></p> <ol style="list-style-type: none"> <li>1. Surveys will be conducted between April 15 and September 15 at the Missouri, Elkhorn, and Platte river crossings in Nebraska. Surveys will extend 0.25-mile on either side of the construction ROW.</li> <li>2. Surveys will be conducted by a biologist familiar with the species and familiar with identifying tern and plover nests.</li> <li>3. Surveys will be conducted from sunrise to approximately 1000, or approximately 1700 to sunset</li> <li>4. All plover or terns located within the survey area will be observed long enough to determine if the area is occupied by these species and if a nest is present.</li> <li>5. Observations of plover and terns will be recorded using GPS. Date, time, observations, and habitat type will be recorded for each sighting.</li> <li>6. Surveys will not be conducted in poor weather (i.e., high wind, precipitation, etc).</li> <li>7. During the 2008 pre-construction surveys, if an active nest is located, a 0.25-mile buffer area will be established to prevent direct loss of the nest, or indirect impacts from human-related disturbance. If an active nest is found in the survey area, the planned activity will be delayed at least 37 days, or seven days post-hatching. If a brood of flightless chicks is observed, activities will be delayed at least seven days.</li> <li>8. Initiation of the project will occur as near to completion of the survey as possible.</li> <li>9. Qualifications of the surveyor, method of survey, and results of the survey will be submitted to the NEGPC and the appropriate USFWS field office.</li> </ol>
<p><b>Western Prairie Fringed Orchid</b> <i>Platanthera praectara</i> FT; NE-T</p>	<p><b>Survey Frequency:</b> Surveys will be conducted in 2007 to determine if the species occurs within the ROW. If no plants are found within the ROW in 2007, surveys should be repeated in 2008 in areas where construction has not occurred prior to the flowering period.</p> <p><b>Procedures:</b></p>

**Keystone Pipeline Project – Mainline & Cushing Extension  
Survey Protocols for Nebraska Special Status Species**

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Species & Status	Survey Protocol
<p><b>Small White Lady's Slipper</b> <i>Cypripedium candidum</i>  NE-T</p>	<p>1. Surveys will occur in areas of "good" habitat that were identified during the 2006 habitat surveys. Surveys will occur within the construction ROW for the project.</p> <p>2. Habitats to be visited include:</p> <ul style="list-style-type: none"> <li>a. Low (wet) prairie dominated by bluestem grasses, wood lily, harebell, and smooth camas</li> <li>b. Upland (dry) prairie on ridges and hillsides dominated by bluestem grasses, needlegrass, pale purple and upright coneflowers and blanketflower.</li> </ul> <p>3. Surveys will be conducted during the flowering period (15-June through 15-July) by a qualified botanist familiar with the species and trained to conduct rare plant surveys.</p> <p>4. Date, time, land use and/or habitat type, and number of orchids observed will be recorded for each sighting. Observations of orchids will be recorded using GPS.</p> <p>5. Qualifications of the surveyor, method of survey, and results of the survey will be submitted to the NDGFP and the appropriate Service field office.</p>
<p><b>Migratory Birds</b></p>	<p><b>Survey Frequency:</b> Surveys will be conducted in 2007 to determine if the species occurs within the ROW. If no plants are found within the ROW in 2007, surveys should be repeated in 2008 in areas where construction has not occurred prior to the flowering period.</p> <p><b>Procedures:</b></p> <ul style="list-style-type: none"> <li>1. Surveyor will focus on visiting good potential habitat identified within the construction ROW and conduct presence/absence surveys for the species.</li> <li>2. Habitats to be visited include: native wet-mesic tallgrass prairies and wet meadows</li> <li>3. Surveys will be conducted during the flowering period (15-May through 7-June) by a qualified botanist familiar with the species and trained to conduct rare plant surveys.</li> <li>4. Date, time, land use and/or habitat type, and number of orchids observed will be recorded for each sighting.</li> <li>5. Qualifications of the surveyor, method of survey, and results of the survey will be submitted to the NEGPC to determine if actions are needed to avoid impacts to this orchid.</li> </ul>
<p><b>TBD</b></p>	

**Stribley, Sara**

---

**From:** Stribley, Sara  
**Sent:** Friday, February 09, 2007 3:45 PM  
**To:** 'Carey.Grell@ngpc.ne.gov'; 'Kristal.Stoner@ngpc.ne.gov'  
**Cc:** Johnson, Charlie  
**Subject:** Thank you

Carey and Kristal,  
Charles and I just wanted to thank you for taking time to meet with us this past week and for driving all the way from Lincoln to Grand Island!!! We will be distributing meeting minutes for your review in the next few days to ensure that we accurately represented the information we discussed at our meeting. We really appreciate your feedback and input, and your willingness to work with us so that we can get accomplished all that we need to do on a project of this size! Once again, if you ever have any concerns or questions, please feel free to give us a call or send us an email! Thanks again, and it was great getting to finally meet you!  
Sincerely,  
Sara

Sara Stribley  
Environmental Coordinator  
ENSR | AECOM  
1601 Prospect Pkwy  
Ft. Collins, Colorado 80525  
P: 970.493.8878  
970.4930213  
[sstribley@ensr.aecom.com](mailto:sstribley@ensr.aecom.com)  
[www.ensr.aecom.com](http://www.ensr.aecom.com)

2/9/2007

**ENSR**

1601 Prospect Parkway, Fort Collins, Colorado 80525  
T 970.493.8878 F 970.493.0213 www.ensr.aecom.com

January 17, 2007

Carey Grell  
Nebraska Game and Parks Commission  
2200 N. 33rd Street  
Lincoln, NE 68503-0370

Dear Ms. Grell:

At this time, ENSR Corporation (ENSR) is providing you with information regarding the implementation of the 2007 biological survey program for the Keystone Mainline and Cushing Extension Pipeline Project in Nebraska, and requesting your feedback and concurrence on certain proposed actions.

### **Project Description**

As provided in previous communications, TransCanada is planning to construct and operate an approximately 1,845-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). The proposed Project would consist of approximately 1,078 miles of new pipeline constructed from the U.S.-Canada border in Cavalier County, North Dakota, to terminals and refineries in Wood River (Madison County) and Patoka (Marion County), Illinois. This pipeline is referred to as the Keystone Mainline. Approximately 283 miles of the Keystone Mainline would parallel the proposed Rockies Express Pipeline - West (REX-West) Project in Kansas and Missouri. In addition, TransCanada proposes to construct a 292-mile pipeline extension (Cushing Extension) that would extend from the Keystone Mainline south from the Nebraska/Kansas border to Cushing, Oklahoma. TransCanada proposes to begin construction of the Keystone Mainline in early 2008, with the system in-service by the end of 2009. Work on the Cushing Extension will begin in late 2009 or early 2010, with a Cushing Extension in-service date of 2010. 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. Electrical powerlines and facility upgrades will be required in some locations to provide power for the new pump stations, though these facilities will be constructed by local utility companies, not Keystone.

### **Biological Survey Program**

In 2006, biological surveys were initiated for several species potentially located along the Keystone Mainline Project route in Nebraska. Additional surveys are planned throughout 2007 for the species surveyed in 2006, and for the majority of remaining sensitive species that may be located within the Keystone Mainline and Cushing Extension Project vicinity (see attached survey schedule). Sensitive species and survey locations have been determined through consultation with the Nebraska Game and Parks Commission (NEGPC), the Nebraska Natural Heritage Program, and the U.S. Fish and Wildlife Service (USFWS). To facilitate your review of the 2007 Keystone Mainline and Cushing Extension biological survey program, ENSR is providing you with the following materials, and asking for your signed concurrence on several proposed actions:

- Proposed Threatened and Endangered Species Survey Schedule (2006-2007) – This document is provided to give an overview of when and where species specific surveys have been, and will be conducted in Nebraska. Please sign and return the survey schedule concurrence form as

Carey Grell  
January 17, 2007  
Page 2

“concur” or “do not concur.” Please also provide specific comments in the area provided if you “do not concur,” in order for ENSR to promptly address concerns.

- Biological Survey March-Charts (2007) – These charts are provided as a visual tool to guide your assessment of the proposed Threatened and Endangered species surveys. The y-axis provides information on approximate survey windows. This axis shows the general timeframe in which ENSR proposes to complete the surveys for a specific species (based on nesting, spawning, flowering periods, etc.) The x-axis provides information on the Mainline or Cushing Extension milepost marker where appropriate habitat has been determined to exist for a species. This axis shows where ENSR proposes to complete species specific surveys.
- Survey Protocols – These documents provide detailed information on how specific surveys will be conducted for Threatened and Endangered species. Wherever possible, survey protocols were produced directly from state or federal agency feedback. Please sign and return the survey protocol concurrence form as “concur” or “do not concur.” Please also provide specific comments in the area provided if you “do not concur,” in order for ENSR to promptly address concerns.
- 1:100k U.S. Geological Survey (USGS) Topographic Maps of the Keystone Mainline and Cushing Extension in Nebraska – Provided for geographic reference to the Project.

Additional copies of these materials are enclosed for distribution to other state wildlife representatives. Copies of these reports also have been sent to John Cochran (Nebraska USFWS – Project Lead). ENSR would also like to meet with you in early February to discuss this material in further detail, and you should have already been contacted by ENSR regarding a meeting date and time. If you have any questions regarding the enclosed materials, please contact me at (970) 493-8878 ext. 181 or email [cjohnson@ensr.aecom.com](mailto:cjohnson@ensr.aecom.com).

Sincerely,



Charles Johnson  
Senior Wildlife Biologist

CJ/ss

Ref: 10623-004

Enc: Proposed Threatened and Endangered Species Survey Schedule  
Biological Survey March-Charts  
Survey Protocols  
1:100k USGS Topographic Maps

# CONFIDENTIAL

## Keystone Pipeline Project Survey Schedule Concurrence Form

<input type="checkbox"/> CONCUR	Signature:
	Name:
<input type="checkbox"/> DO NOT CONCUR	Title:
	Date:

<i>If you checked "DO NOT CONCUR," please provide reasons and specific directions in the space provided below on how survey schedule should be changed to meet your acceptance:</i>



# CONFIDENTIAL

## Keystone Pipeline Project Survey Protocol Concurrence Form

<input type="checkbox"/> CONCUR	Signature:
	Name:
<input type="checkbox"/> DO NOT CONCUR	Title:
	Date:

*If you checked "DO NOT CONCUR," please provide reasons and specific directions in the space provided below on how survey protocols should be changed to meet your acceptance:*

**Keystone Pipeline Project  
Proposed Survey Schedule for Nebraska – Mainline & Cushing Extension  
2006-2007**

<b>Completed 2006 Surveys</b>					
<b>Species &amp; Status</b>	<b>Approximate Survey Dates</b>	<b>Specific Survey Areas (by County &amp; MP)</b>	<b>Survey Description</b>	<b>Surveyor</b>	<b>Comments</b>
<b>Raptors</b>	April 26-May 2, 2006	MP: 436-649.3 (Cedar, Wayne, Stanton, Platte, Colfax, Butler, Seward, Saline, Jefferson, Gage counties)	An aerial survey was conducted to identify raptor nest sites and breeding territories within at least 0.25 miles of the proposed ROW.	Karen Caddis, Charles Johnson – ENSR Senior Wildlife Biologists	

<b>Proposed 2007 Surveys</b>					
<b>Species &amp; Status</b>	<b>Approximate Survey Dates</b>	<b>Specific Survey Areas (by County &amp; MP)</b>	<b>Survey Description</b>	<b>Surveyor</b>	<b>Comments</b>
<b>River otter</b> <i>Lontra Canadensis</i> NE-T	Denning season: March through September	<b>Coffax:</b> 542 (Platte River) <b>Stanton:</b> 502 (Elkhorn River)	One survey will be conducted for den sites within 0.25-mile upstream and downstream of the river crossings on both sides of the river bank.	Qualified ENSR biologist and/or contractor.	See attached survey protocol.
<b>Bald eagle</b> <i>Haliaeetus leucocephalus</i> FT; NE-T	January/February	<b>Cedar:</b> 436 (Missouri River) <b>Coffax:</b> 542 (Platte River) <b>Stanton:</b> 502 (Elkhorn River)	Aerial survey to locate winter roosts and eagle nests along major river crossings in ROW. Survey will be conducted 1-mile from the construction ROW.	Mike Phelan, Karen Caddis – ENSR wildlife biologists	See attached survey protocol.  2008 pre-construction surveys will not be required if construction occurs outside of the breeding/winter roost seasons for this species.
<b>Raptors</b>	March-April	MP: 436-649.3 (Cedar, Wayne, Stanton, Platte, Colfax, Butler, Seward, Saline, Jefferson, Gage counties)	Aerial survey to locate occupied nest sites and breeding territories within at least 0.25 miles of the proposed ROW.	Qualified ENSR biologist and/or contractor.	See attached survey protocol.  2008 pre-construction surveys will not be required

**Keystone Pipeline Project  
Proposed Survey Schedule for Nebraska – Mainline & Cushing Extension  
2006-2007**

Proposed 2007 Surveys					
Species & Status	Approximate Survey Dates	Specific Survey Areas (by County & MP)	Survey Description	Surveyor	Comments
<b>Interior Least Tern</b> <i>Sterna antillarum</i> <i>athalassos</i> FE; NE-E  <b>Piping Plover</b> <i>Charadrius</i> <i>melodus</i> FT; NE-T	Nesting period: 15-April to 15-Sept.	Cedar: 436 (Missouri River). Colfax: 542 (Platte River). Stanton: 502 (Elkhorn River).	One ground survey or aerial survey conducted 0.25 from the construction ROW.	Qualified ENSR biologist and/or contractor.	if construction occurs outside of the breeding season.  See attached survey protocol.  2008 pre-construction surveys will not be required if construction occurs outside of the breeding season.
<b>Western fringed orchid</b> <i>Platanthera praeclara</i> FT; NE-T	Flowering period: 15-June to 15-July.	Butler: 548.1-548.2, 564.4-564.7 Cedar: 436.0-436.1 Colfax: 540.9-541.2 Jefferson: 622.2-622.4, 635.1-636.8, 637.0-637.4 Saline: 594.8-595.1, 606.4-606.5 Stanton: 503.4-503.5	One survey will be conducted during the flowering period to determine presence within the construction ROW.	Qualified ENSR biologist and/or contractor	See attached survey protocol.  2008 pre-construction surveys would only be required in areas where this species was observed in 2007.
<b>Small white lady's slipper</b> <i>Cypripedium candidum</i> NE-T	Flowering period: 15-May to 7-June.	Butler: 548.1-548.2, 564.4-564.7 Cedar: 436.0-436.1 Colfax: 540.9-541.2 Jefferson: 622.2-622.4, 635.1-636.8, 637.0-637.4	One survey will be conducted during the flowering period to determine presence within the construction ROW.	Qualified ENSR biologist and/or contractor	See attached survey protocol.  2008 pre-construction surveys would only be required in areas where this

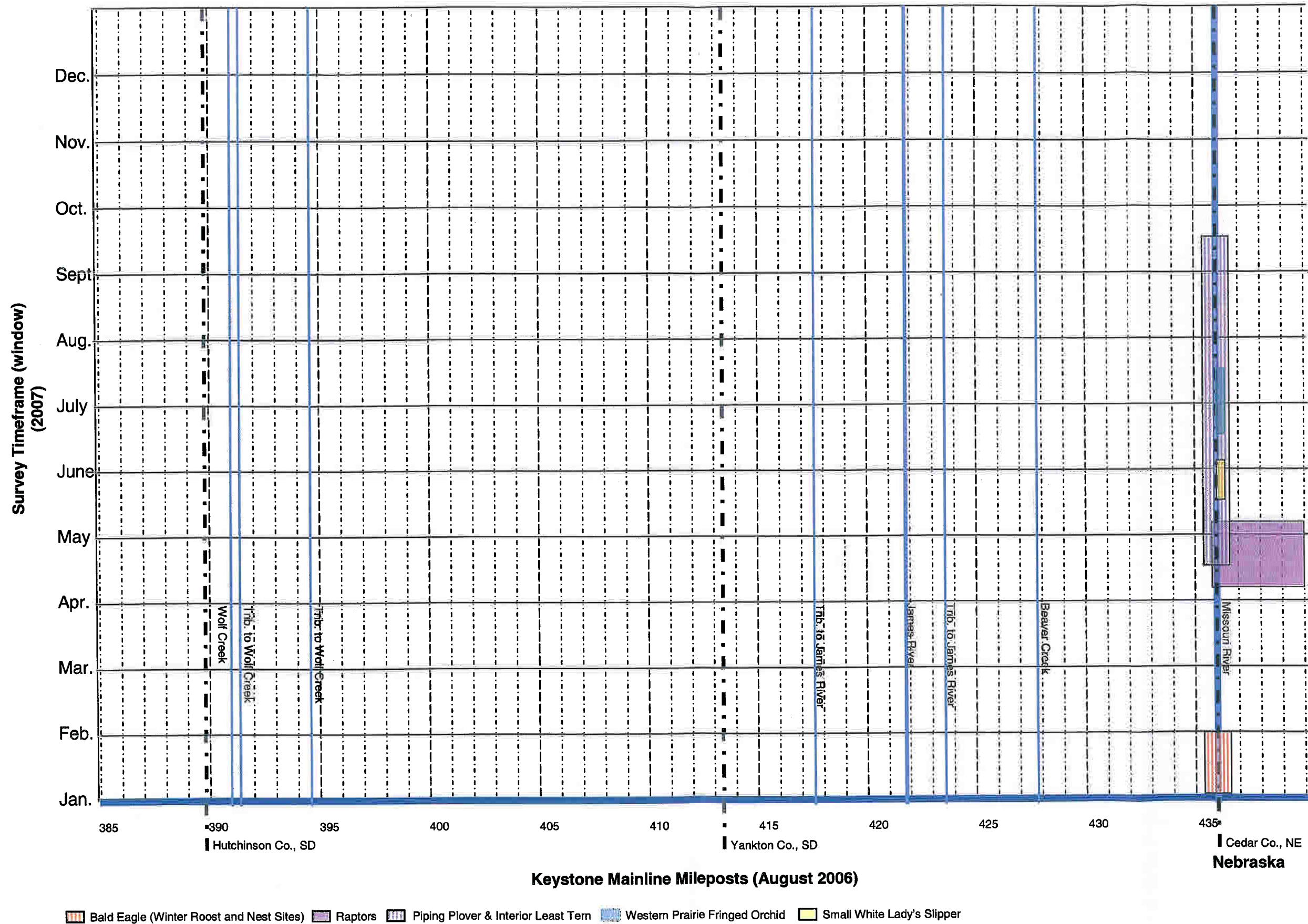
**Keystone Pipeline Project**  
**Proposed Survey Schedule for Nebraska – Mainline & Cushing Extension**  
**2006-2007**

<b>Proposed 2007 Surveys</b>					
<b>Species &amp; Status</b>	<b>Approximate Survey Dates</b>	<b>Specific Survey Areas (by County &amp; MP)</b>	<b>Survey Description</b>	<b>Surveyor</b>	<b>Comments</b>
		Saline: 594.8-595.1, 606.4-606.5 Stanton: 503.4-503.5			species was observed in 2007.

**Keystone Pipeline Project  
Proposed Survey Schedule for Nebraska - Mainline & Cushing Extension  
2006-2007**

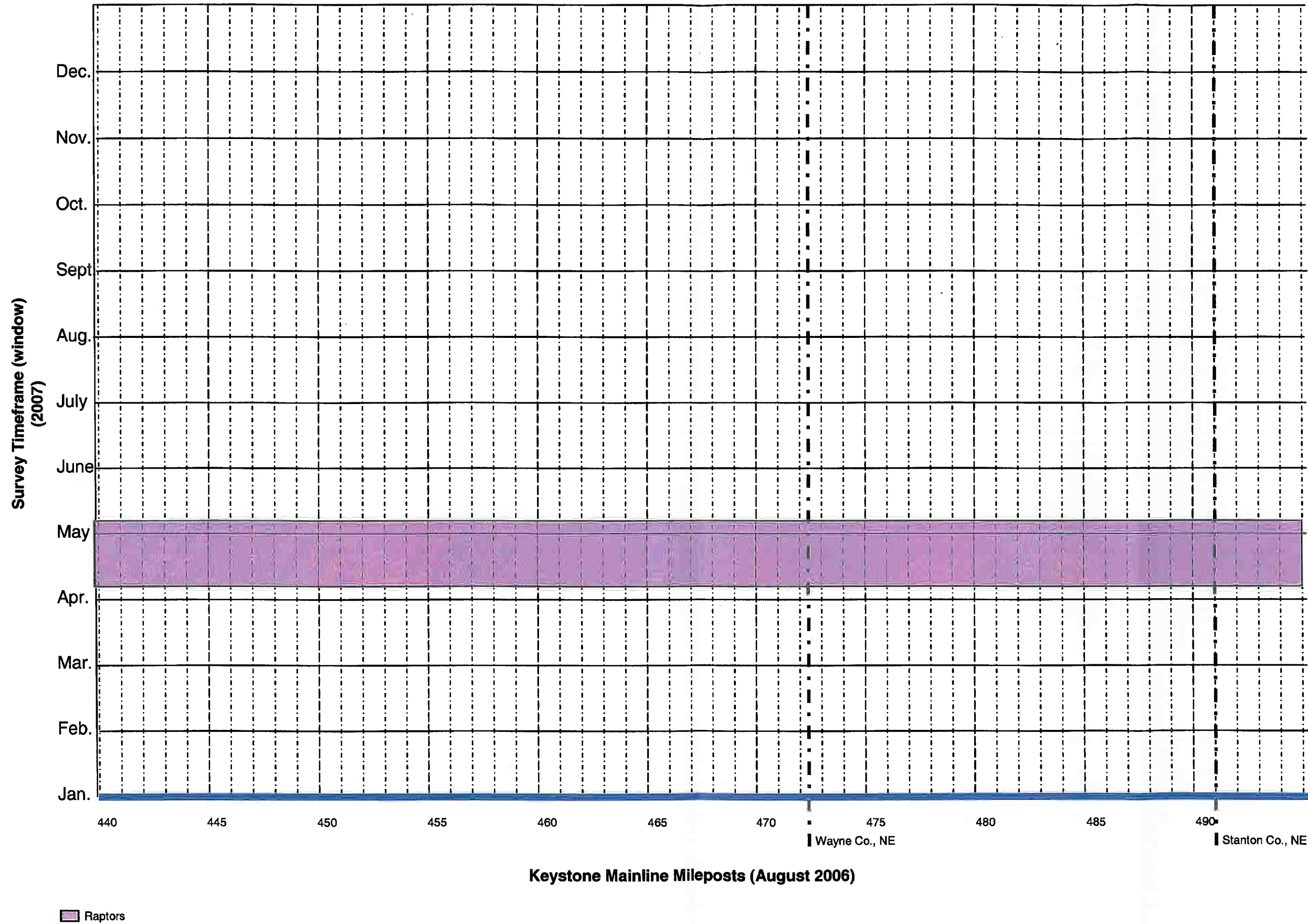
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		Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
1	Completed Raptor Surveys		4/26	5/2																	
			Completed Raptor Surveys																		
2	Bald Eagle Winter Roost & Nest Surveys																				
3	River Otter Denning Surveys																				
4	Raptor Surveys																				
5	Interior Least Tern & Piping Plover Surveys																				
6	Small White Lady's Slipper Surveys																				
7	Western Prairie Fringed Orchid Surveys																				

Keystone Pipeline Project  
Biological Survey March-Chart 2007



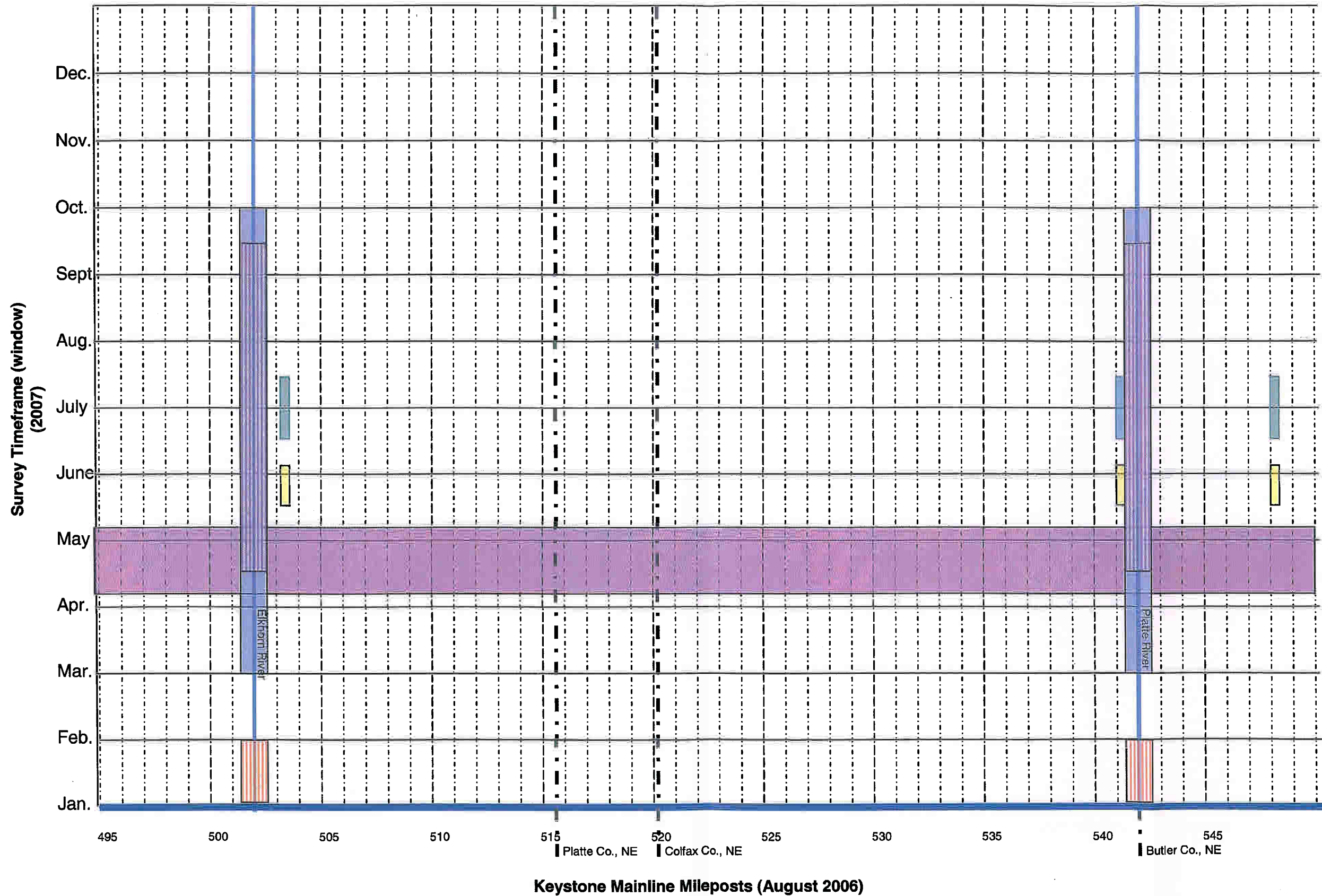
Note: Survey timeframe represents window biological surveys should be completed within, not the actual time it will take to complete surveys.

Keystone Pipeline Project  
Biological Survey March-Chart 2007



Note: Survey timeframe represents window biological surveys should be completed within, not the actual time it will take to complete surveys.

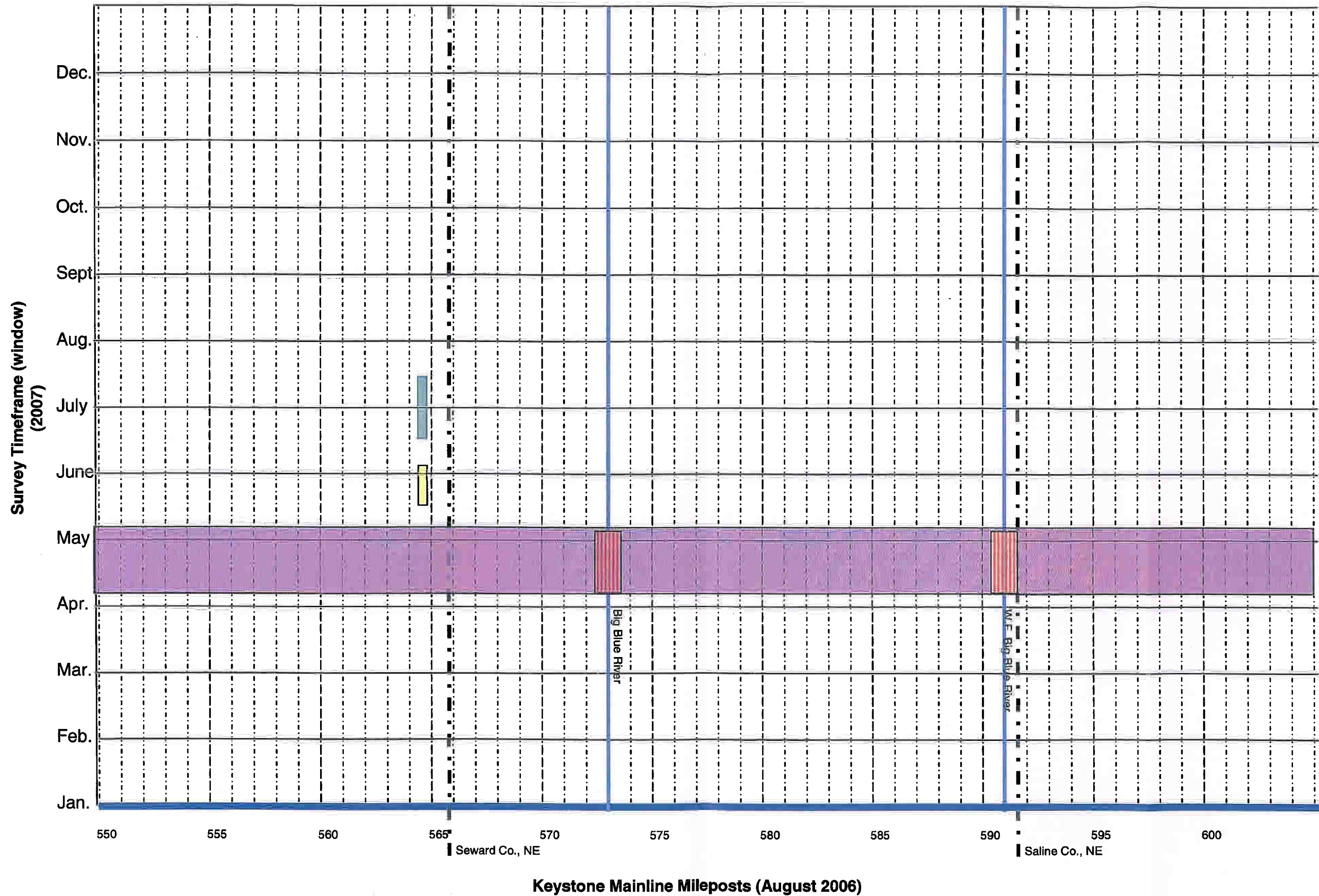
Keystone Pipeline Project  
Biological Survey March-Chart 2007



Note: Survey timeframe represents window biological surveys should be completed within, not the actual time it will take to complete surveys.



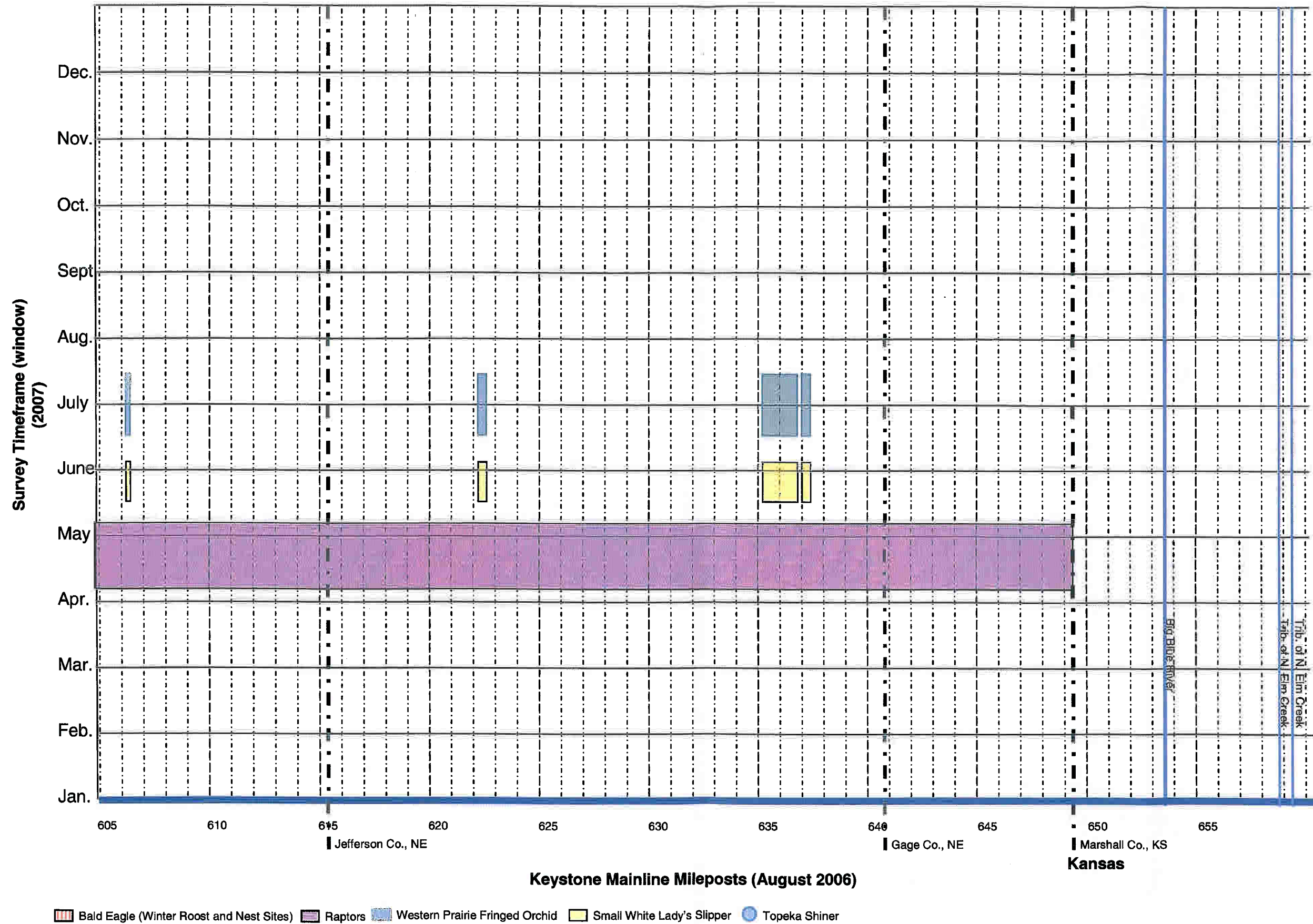
Keystone Pipeline Project  
Biological Survey March-Chart 2007



■ Bald Eagle (Nest Sites) ■ Raptors ■ Western Prairie Fringed Orchid ■ Small White Lady's Slipper

Note: Survey timeframe represents window biological surveys should be completed within, not the actual time it will take to complete surveys.

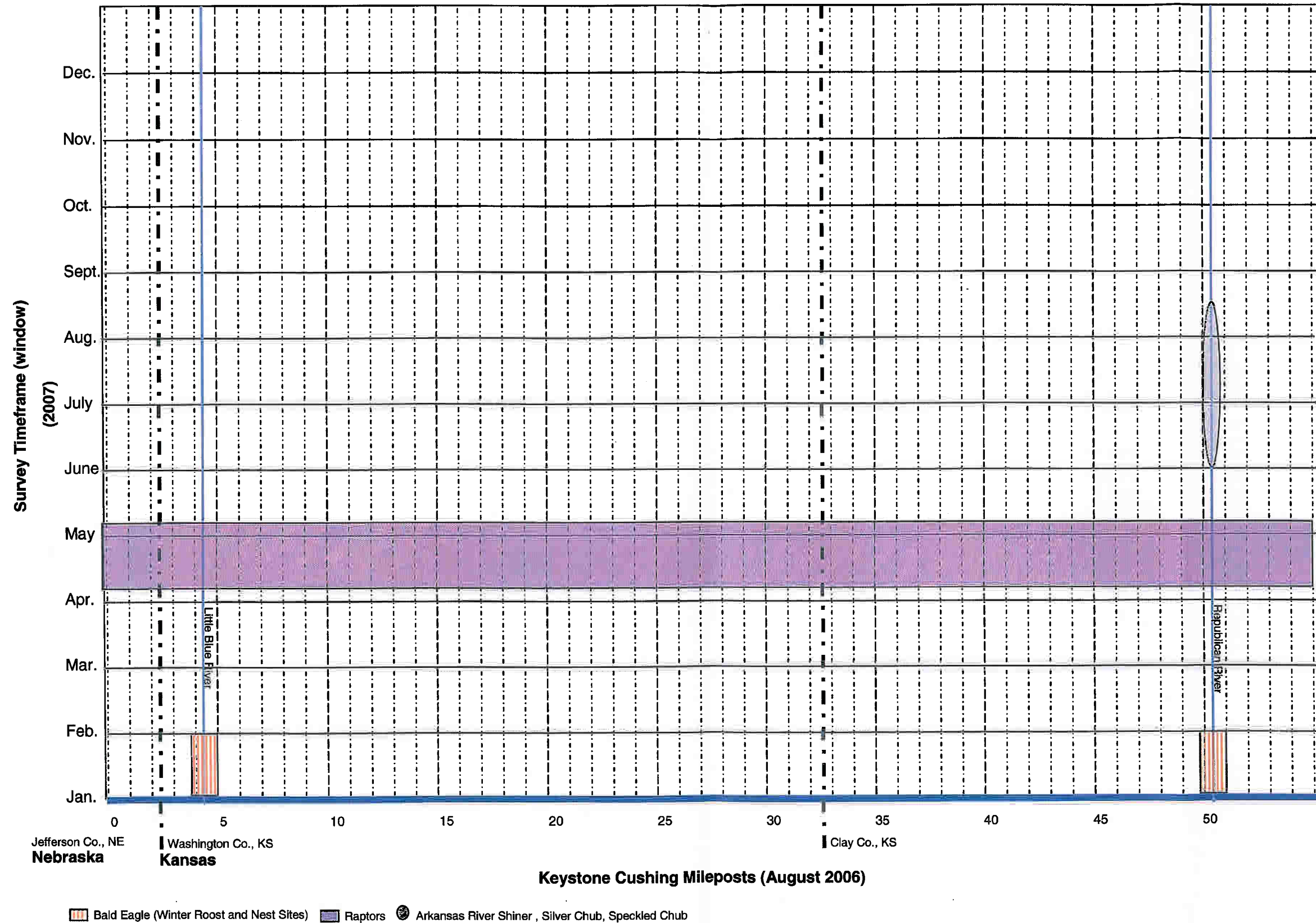
Keystone Pipeline Project  
Biological Survey March-Chart 2007



Note: Survey timeframe represents window biological surveys should be completed within, not the actual time it will take to complete surveys.

Keystone Pipeline Project – Cushing Extension

Biological Survey March-Chart 2007



Note: Survey timeframe represents window biological surveys should be completed within, not the actual time it will take to complete surveys.

**Keystone Pipeline Project – Mainline & Cushing Extension  
Survey Protocols for Nebraska Special Status Species**

Species & Status	Survey Protocol
<p><b>River Otter</b> <i>Lontra Canadensis</i> NE-T</p>	<p><b>Survey Frequency:</b> Surveys will be conducted in 2007 at the crossing of the Elkhorn and Platte Rivers during the river otter denning season (March through September). Surveys may also be required prior to construction in 2008, if pipeline construction occurs during the denning season.</p> <p><b>Procedures:</b></p> <ol style="list-style-type: none"> <li>1. Surveys will be conducted by a qualified biologist at the Elkhorn and Platte river crossings.</li> <li>2. Surveys will be conducted for den sites within 0.25-mile upstream and downstream of the river crossing on both sides of the river bank.</li> <li>3. Observations of river otters or dens will be recorded using GPS. Date, time, number otters/dens, land use and/or habitat type will be recorded for each sighting.</li> <li>4. Results of the survey will be sent to the NEGPC to determine if actions are needed to avoid impacts to the river otter.</li> </ol>
<p><b>Bald Eagle</b> <i>Haliaeetus leucoccephalus</i> FT; NE-T</p>	<p><b>Survey Frequency:</b> Aerial bald eagle surveys will be conducted for nest sites and winter roost sites in 2007. Surveys may also be required prior to construction in 2008, if pipeline construction occurs during the breeding season (1-February through 15-August) or winter roosting season (1-November through 1-April).</p> <p><b>Procedures:</b></p> <ol style="list-style-type: none"> <li>1. The bald eagle surveys will be conducted along river corridors or historical bald eagle nest/winter roosting sites that occur within 1-mile from the project Right-of-Way (ROW). Stands of coniferous or deciduous trees will be surveyed for active nest sites during the breeding season</li> <li>2. Stands of coniferous or deciduous trees will be surveyed for active winter roost sites from 1 hour before sunrise or sunset to 1 hour after sunrise or sunset.</li> <li>3. A helicopter will be used for the surveys. Whenever possible, two observers will be used to conduct the surveys.</li> <li>4. Observations of bald eagles, nests, or roosting eagles will be recorded using Global Positioning Systems (GPS). The date, location, nest condition, activity status, nest condition, and habitat will be recorded for each sighting.</li> </ol>

**Keystone Pipeline Project – Mainline & Cushing Extension  
Survey Protocols for Nebraska Special Status Species**

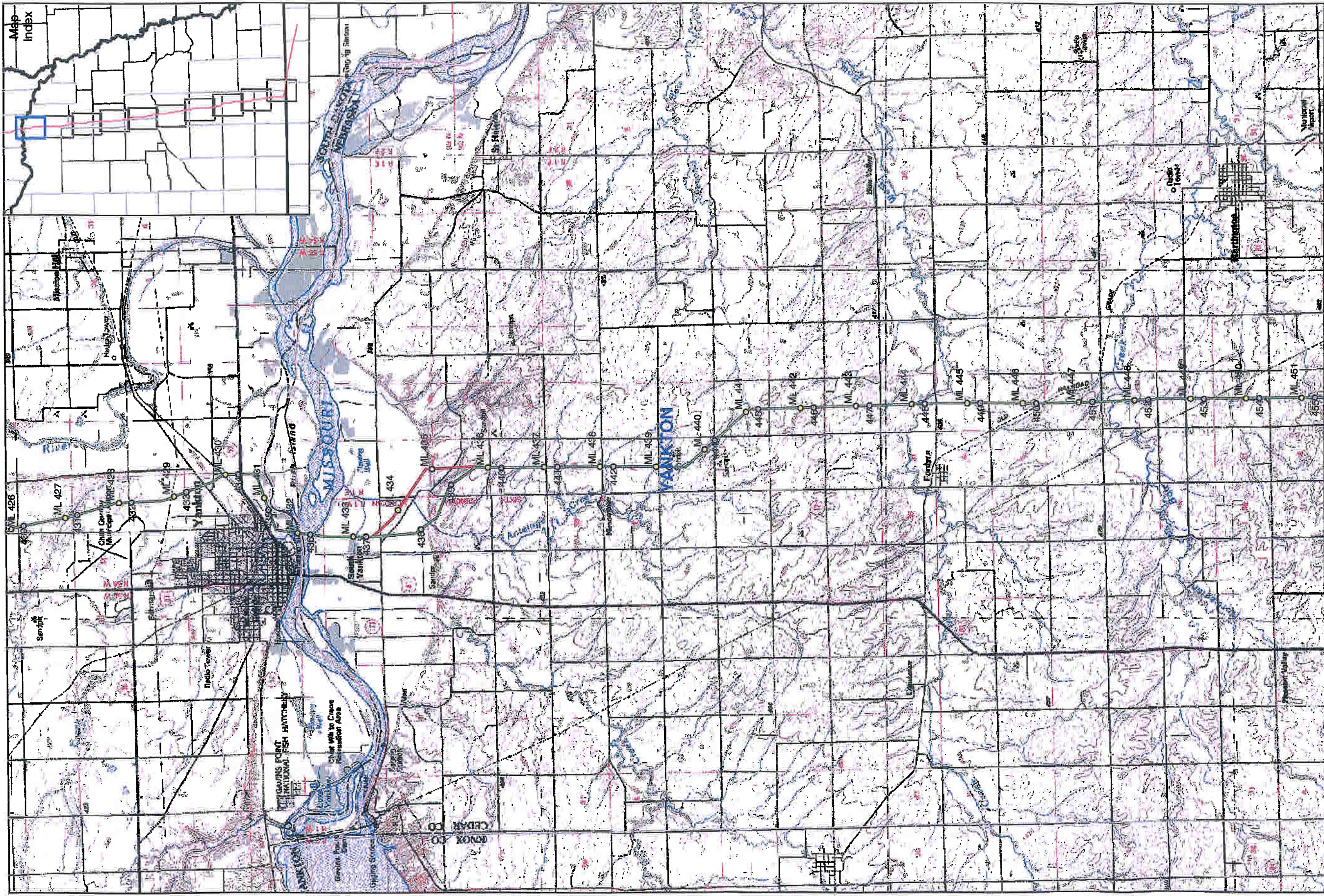
<b>Species &amp; Status</b>	<b>Survey Protocol</b>
	<p>5. Qualifications of the surveyor, method of survey, and results of the survey will be submitted to the NEGPC and the appropriate U.S. Fish and Wildlife Service (USFWS) field office.</p> <p><b>Nest and Winter Roost Site Buffer Requirements:</b></p> <ol style="list-style-type: none"> <li>1. Restrict construction activities within 1-mile from bald eagle nests from February 1 through August 15, unless permitted by the USFWS.</li> <li>2. Restrict construction activities within 1-mile from bald eagle communal winter roosts from November 1 through April 1, unless permitted by the USFWS.</li> <li>3. Habitat altering activities should be prohibited within 0.5-mile of active roost sites year round.</li> </ol>
<b>Raptors</b>	<p><b>Survey Frequency:</b> A raptor survey (aerial helicopter survey) was conducted within 0.25- to 0.50-mile from the edge of the construction ROW in April of 2006, to identify active and inactive nest sites along the project route. A raptor report was submitted to the USFWS in December 2006.</p> <p>A second raptor survey effort will be conducted prior to leaf-out in the spring of 2007. The focus of this survey is to identify nest sites that would be directly impacted from construction activities.</p> <p><b>Procedures:</b></p> <ol style="list-style-type: none"> <li>1. Raptor surveys will be conducted along the entire proposed Project route, focusing on active and inactive nest sites that occur within the construction ROW.</li> <li>2. A helicopter will be used for the raptor surveys. Whenever possible, two observers will be used to conduct the surveys.</li> <li>3. Observations of raptors and nest sites will be recorded using GPS. The date, location, nest condition, activity status, raptor species, and habitat will be recorded for each sighting.</li> <li>4. Qualifications of the surveyor, method of survey, and results of the survey will be submitted to the NEGPC and the appropriate USFWS field office.</li> </ol>
<b>Interior Least Tern</b>	<p><b>Survey Frequency:</b> Surveys will be conducted in 2007 at the Missouri, Elkhorn and Platte river crossings during the</p>

**Keystone Pipeline Project – Mainline & Cushing Extension  
Survey Protocols for Nebraska Special Status Species**

Species & Status	Survey Protocol
<p><i>Sterna antillarum</i> <i>athalassos</i> FE; NE-E</p> <p><b>Piping Plover</b> <i>Charadrius melodus</i> FT; NE-T</p>	<p>breeding season (15-April to 15-September) to identify occupied nest sites. Surveys may also be required prior to construction in 2008, if pipeline construction occurs during the breeding season.</p> <p><b>Procedures:</b></p> <ol style="list-style-type: none"> <li>1. Surveys will be conducted between April 15 and September 15 at the Missouri, Elkhorn, and Platte river crossings in Nebraska. Surveys will extend 0.25-mile on either side of the construction ROW.</li> <li>2. Surveys will be conducted by a biologist familiar with the species and familiar with identifying tern and plover nests.</li> <li>3. Surveys will be conducted from sunrise to approximately 1000, or approximately 1700 to sunset</li> <li>4. All plover or terns located within the survey area will be observed long enough to determine if the area is occupied by these species and if a nest is present.</li> <li>5. Observations of plover and terns will be recorded using GPS. Date, time, observations, and habitat type will be recorded for each sighting.</li> <li>6. Surveys will not be conducted in poor weather (i.e., high wind, precipitation, etc).</li> <li>7. During the 2008 pre-construction surveys, if an active nest is located, a 0.25-mile buffer area will be established to prevent direct loss of the nest, or indirect impacts from human-related disturbance. If an active nest is found in the survey area, the planned activity will be delayed at least 37 days, or seven days post-hatching. If a brood of flightless chicks is observed, activities will be delayed at least seven days.</li> <li>8. Initiation of the project will occur as near to completion of the survey as possible.</li> <li>9. Qualifications of the surveyor, method of survey, and results of the survey will be submitted to the NEGPC and the appropriate USFWS field office.</li> </ol>
<p><b>Western Prairie Fringed Orchid</b> <i>Platanthera praeclara</i> FT; NE-T</p>	<p><b>Survey Frequency:</b> Surveys will be conducted in 2007 to determine if the species occurs within the ROW. 2008 pre-construction surveys would be conducted only in areas where this species was observed in 2007.</p> <p><b>Procedures:</b></p> <ol style="list-style-type: none"> <li>1. Surveys will occur in areas of "good" habitat that was identified during the 2006 habitat surveys. Surveys</li> </ol>

**Keystone Pipeline Project – Mainline & Cushing Extension  
Survey Protocols for Nebraska Special Status Species**

Species & Status	Survey Protocol
<p><b>Small White Lady's Slipper</b> <i>Cypripedium candidum</i> NE-T</p>	<p>will occur within the construction ROW for the project.</p> <p>2. Habitats to be visited include:</p> <ol style="list-style-type: none"> <li>a. Low (wet) prairie dominated by bluestem grasses, wood lily, harebell, and smooth camas</li> <li>b. Upland (dry) prairie on ridges and hillsides dominated by bluestem grasses, needlegrass, pale purple and upright coneflowers and blanketflower.</li> </ol> <p>3. Surveys will be conducted during the flowering period (15-June through 15-July) by a qualified botanist familiar with the species and trained to conduct rare plant surveys.</p> <p>4. Date, time, land use and/or habitat type, and number of orchids observed will be recorded for each sighting. Observations of orchids will be recorded using GPS.</p> <p>5. Qualifications of the surveyor, method of survey, and results of the survey will be submitted to the NDGFP and the appropriate Service field office.</p>
<p><b>Migratory Birds</b></p>	<p><b>Survey Frequency:</b> Surveys will be conducted in 2007 to determine if the species occurs within the ROW. 2008 pre-construction surveys would be conducted only in areas where this species was observed in 2007.</p> <p><b>Procedures:</b></p> <ol style="list-style-type: none"> <li>1. Surveyor will focus on visiting good potential habitat identified within the construction ROW and conduct presence/absence surveys for the species.</li> <li>2. Habitats to be visited include: native wet-mesic tallgrass prairies and wet meadows</li> <li>3. Surveys will be conducted during the flowering period (15-May through 7-June) by a qualified botanist familiar with the species and trained to conduct rare plant surveys.</li> <li>4. Date, time, land use and/or habitat type, and number of orchids observed will be recorded for each sighting.</li> <li>5. Qualifications of the surveyor, method of survey, and results of the survey will be submitted to the NEGPC to determine if actions are needed to avoid impacts to this orchid.</li> </ol> <p style="text-align: center;"><b>TBD</b></p>



Map Index

◊ Mileposts (8/17/06)  
 ◊ Mileposts (2/9/06)  
 — Pipeline (8/17/06)  
 — Pipeline (2/9/06)

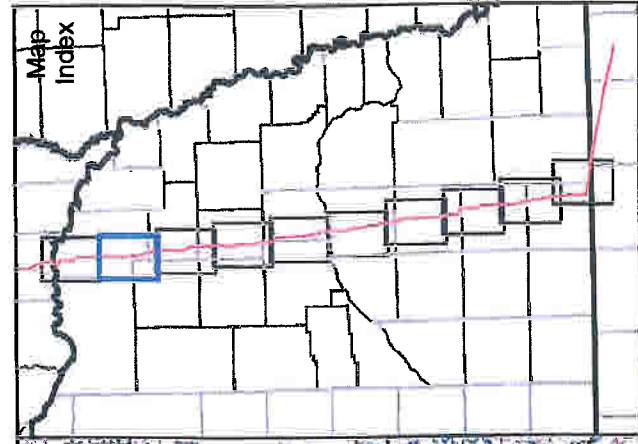
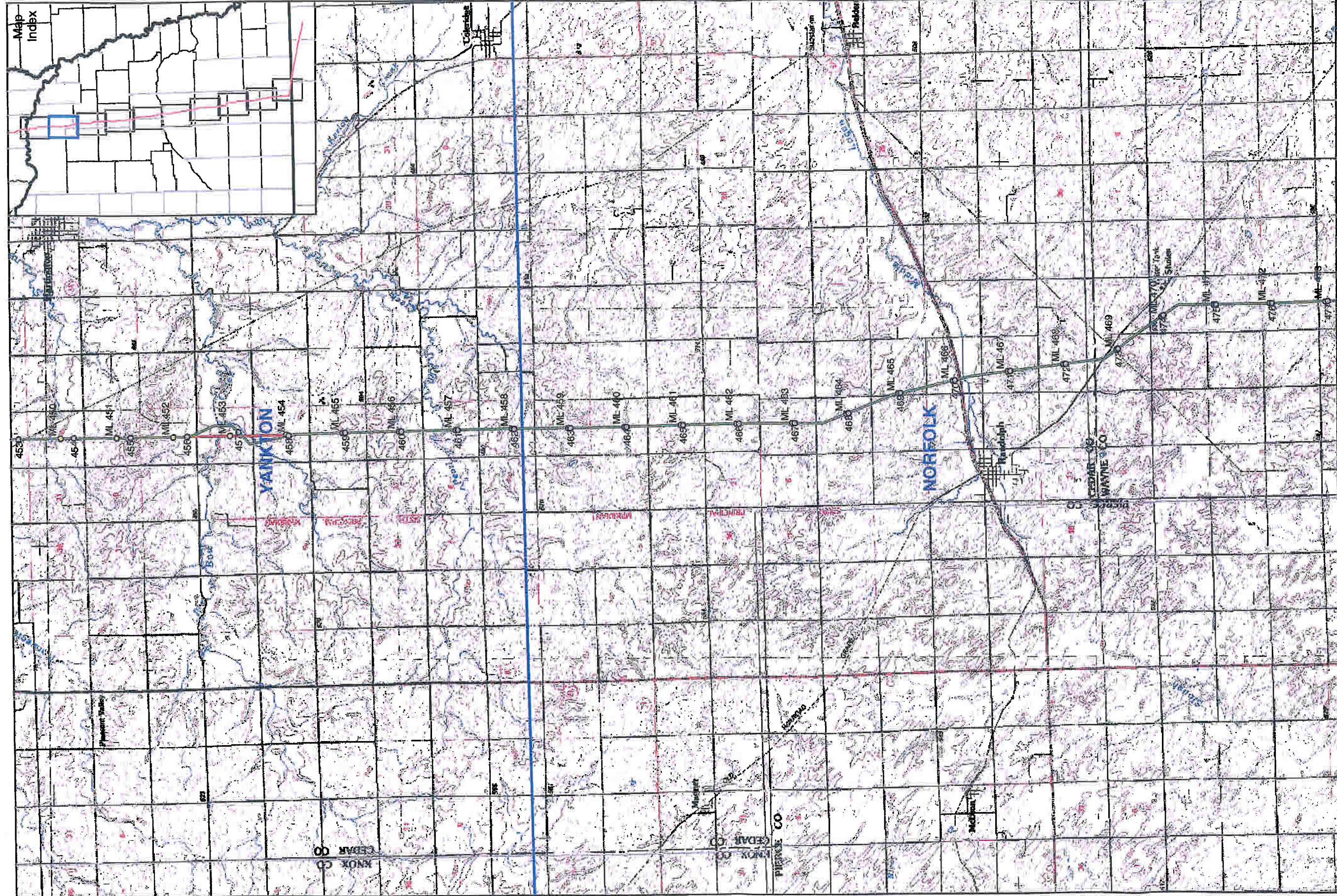
N  
 0 0.5 1 2 Miles

Keystone Pipeline Project

Map 1 of 10  
 General Project Location  
 (Nebraska)

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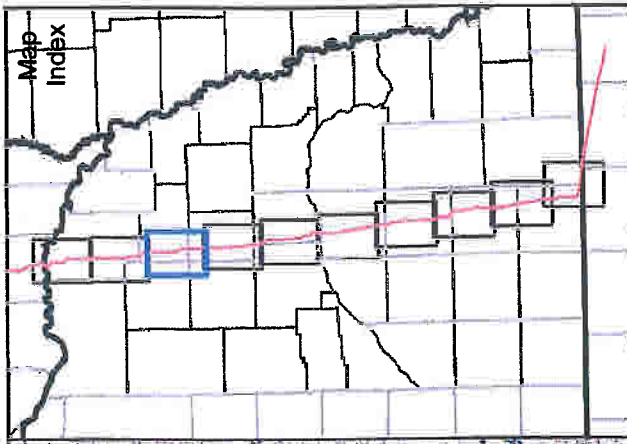
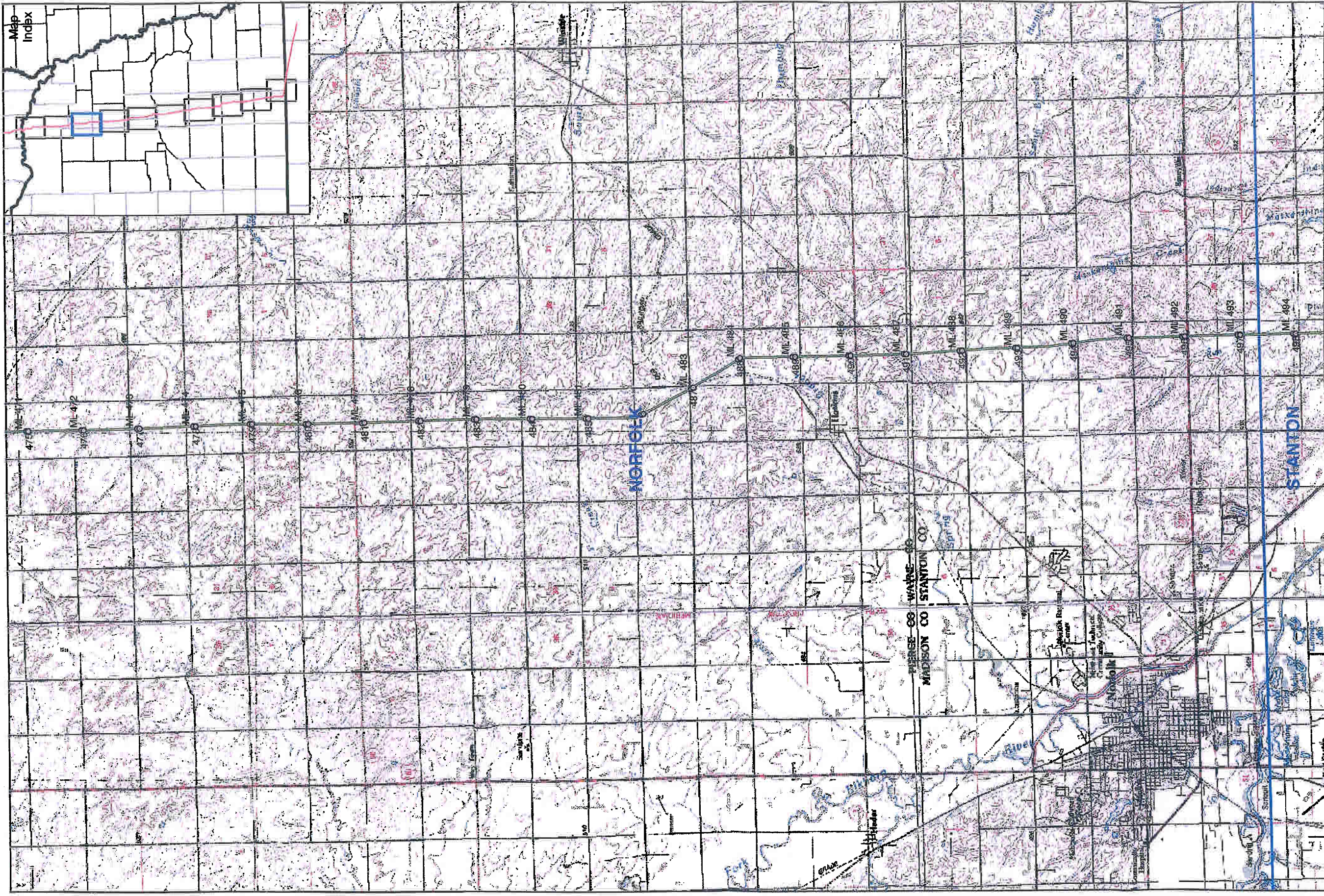
◊ Mileposts (8/17/06)  
 ◊ Mileposts (2/9/06)  
 Pipeline (8/17/06)  
 Pipeline (2/9/06)



Keystone Pipeline Project

Map 2 of 10  
 General Project Location  
 (Nebraska)

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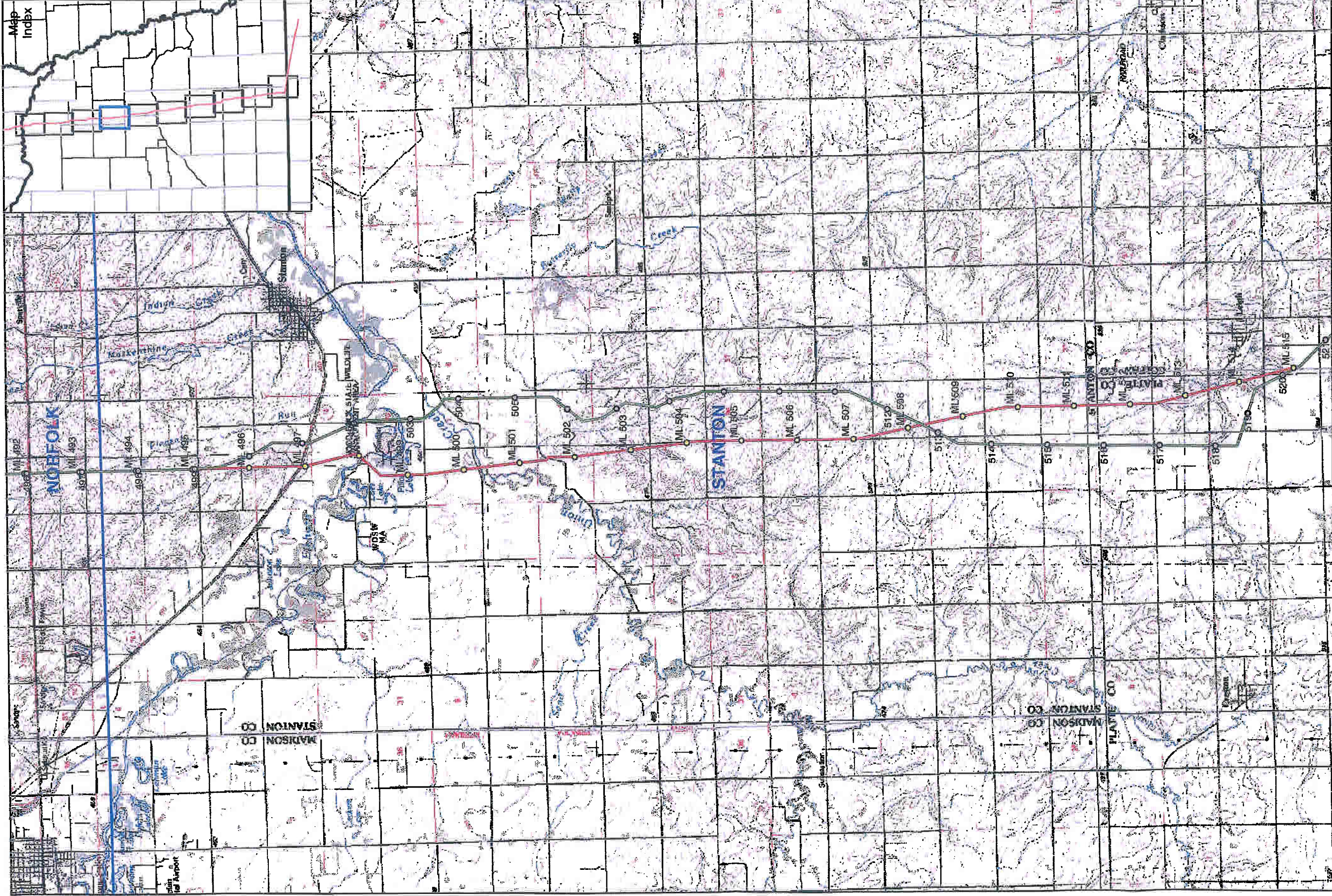


◊ Mileposts (8/17/06)  
 ◊ Mileposts (2/9/06)  
 Pipeline (8/17/06)  
 Pipeline (2/9/06)

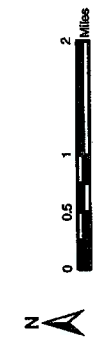


Keystone Pipeline Project

Map 3 of 10  
 General Project Location  
 (Nebraska)

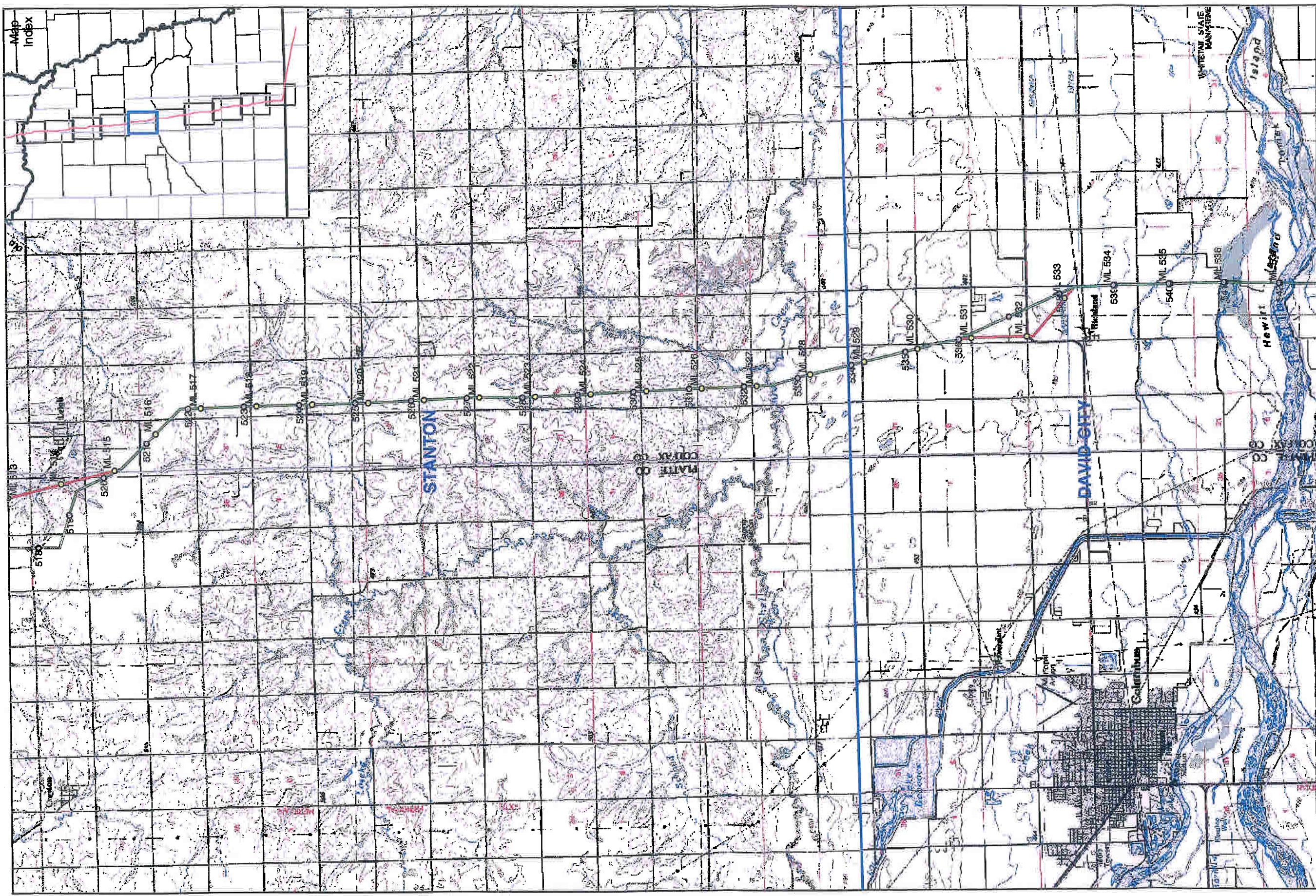


- ◊ Mileposts (8/17/06)
- ◊ Mileposts (2/9/06)
- Pipeline (8/17/06)
- Pipeline (2/9/06)



Keystone Pipeline Project  
  
 An Amoco Company

Map 4 of 10  
 General Project Location  
 (Nebraska)



Map Index

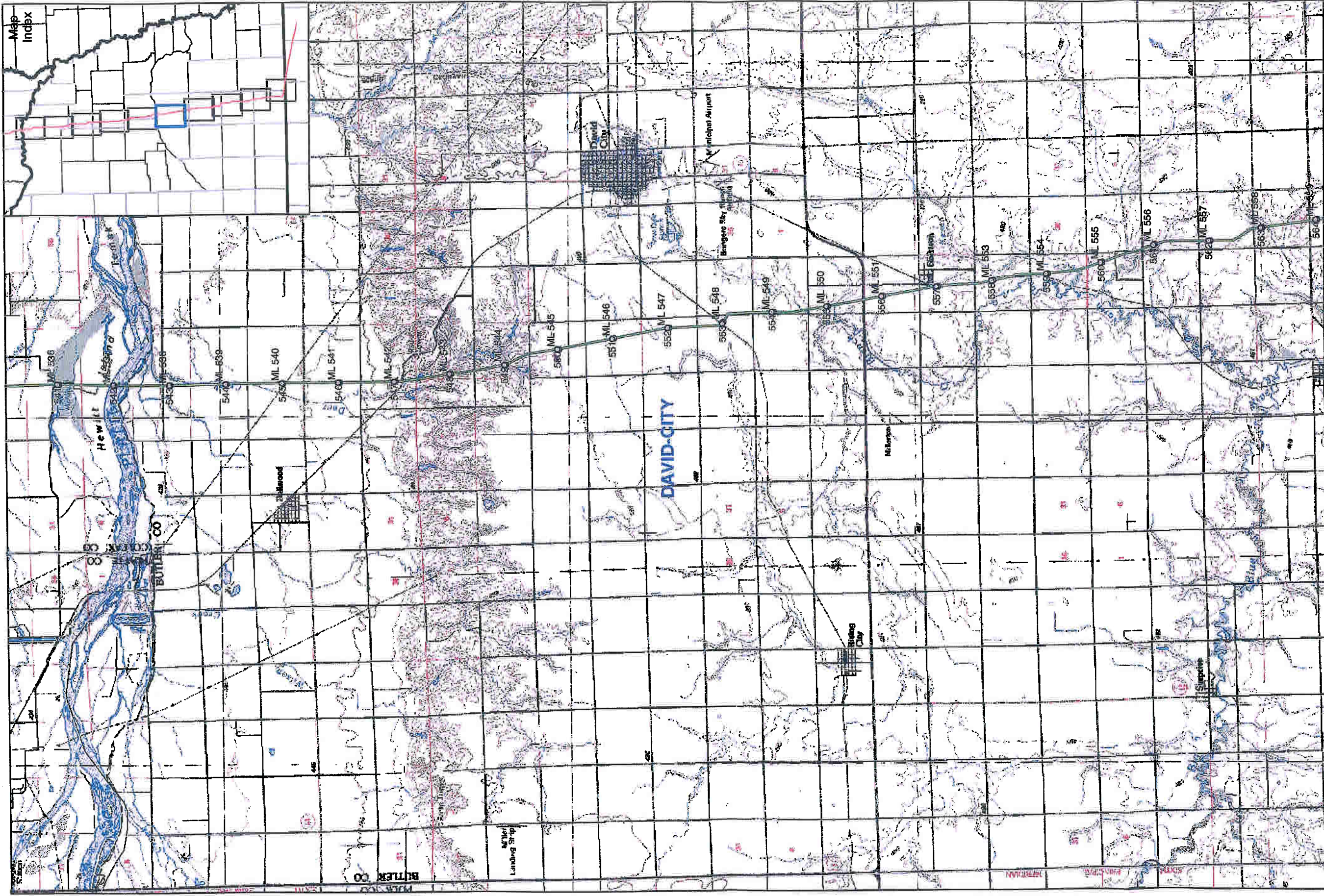
Legend:  
♦ Mileposts (8/17/06)  
♦ Mileposts (2/9/06)  
— Pipeline (8/17/06)  
— Pipeline (2/9/06)

Scale: 0 0.5 1 2 Miles  
North Arrow

Keystone Pipeline Project  
**TransCanada**  
BY APPOINTMENT TO THE GOVERNMENT

Map 5 of 10  
General Project Location  
(Nebraska)

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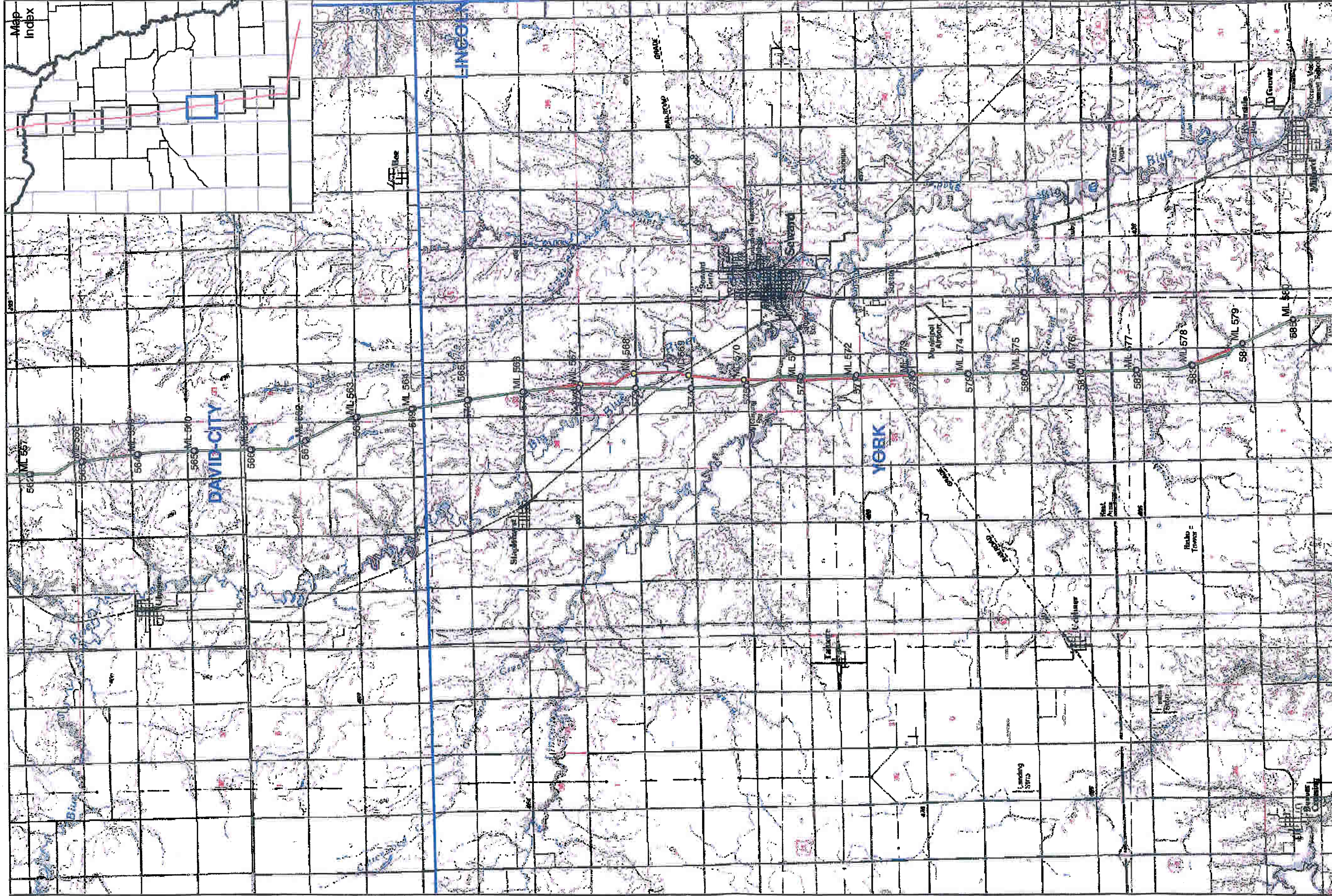
◊ Mileposts (8/17/06)  
 ○ Mileposts (2/9/06)  
 — Pipeline (8/17/06)  
 - - Pipeline (2/9/06)

0 0.5 1 2 Miles  
 North Arrow

Keystone Pipeline Project

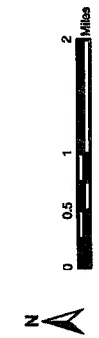
Map 6 of 10  
 General Project Location  
 (Nebraska)

2006081710553\_001\_KeystonePipeline Nebraska Map6.mxd



Map Index

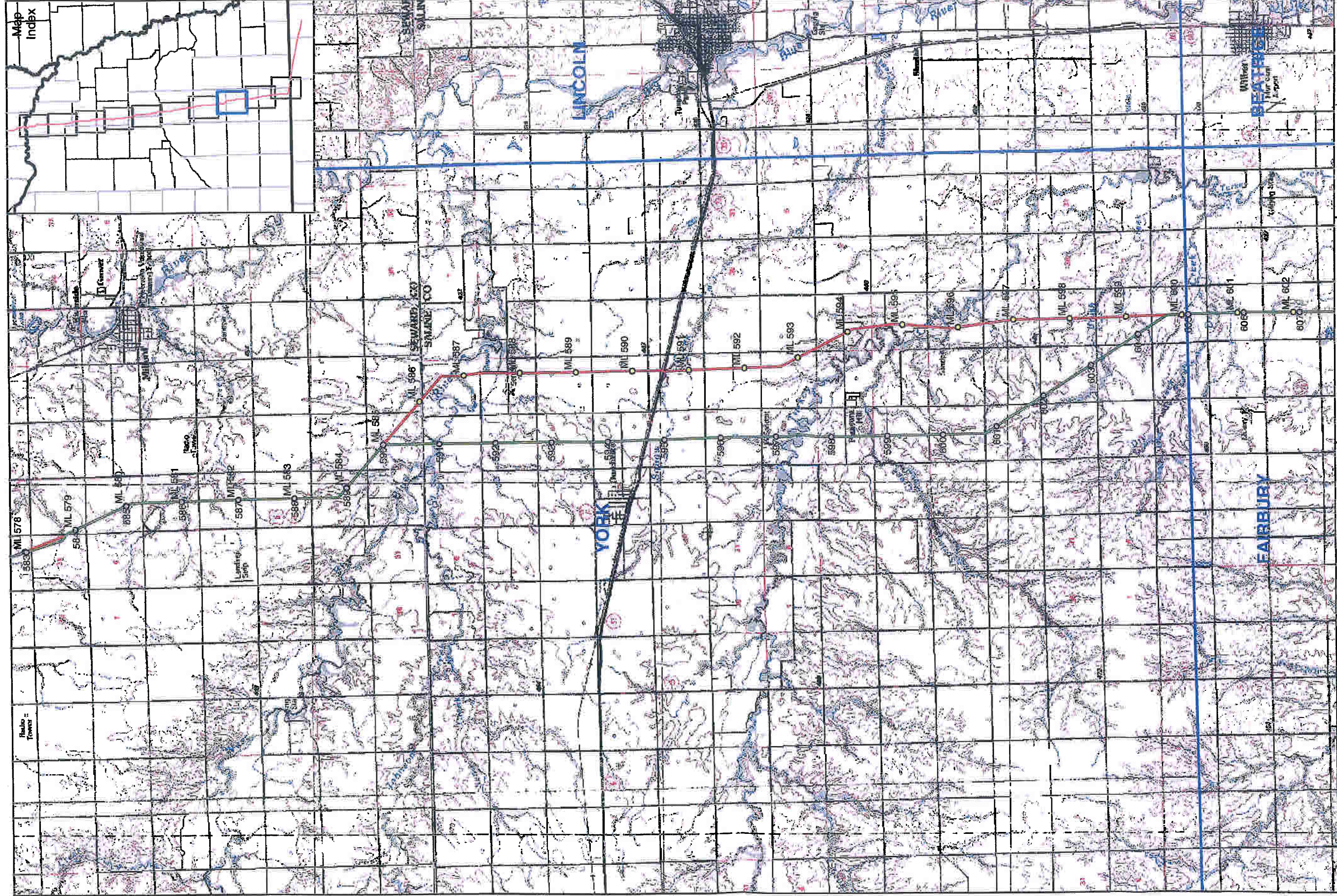
- ◆ Mileposts (8/17/06)
- ◆ Mileposts (2/9/06)
- Pipeline (8/17/06)
- Pipeline (2/9/06)



Keystone Pipeline Project  


Map 7 of 10  
 General Project Location  
 (Nebraska)

\\ppl\proj\GIS\roads\_2004\_Keystone\Nebraska\_10000\_milepost\roads\_10000\_milepost\roads\_10000\_milepost\_081706.mxd




Map Index

Flashes =  
Powers

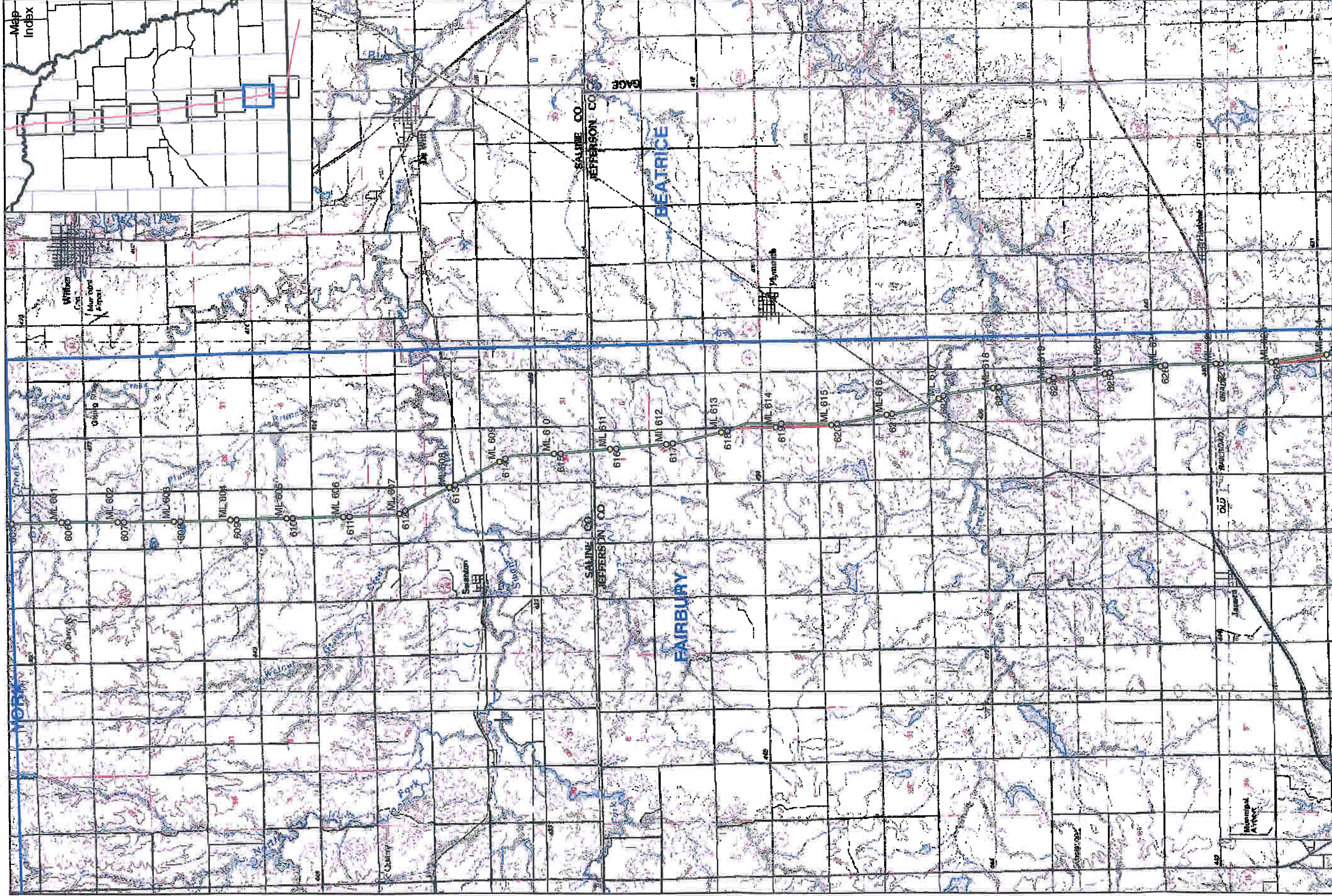
- ◊ Mileposts (8/17/06)
- ◊ Mileposts (2/9/06)
- Pipeline (8/17/06)
- Pipeline (2/9/06)



Keystone Pipeline Project  
 TransCanada  
AN IRVING-CLOUD COMPANY

Map 8 of 10  
 General Project Location  
 (Nebraska)

Z:\Project\10353\_c06\_Keystone\Drawings\_10353\_10353\Map8.mxd



Map Index

- ◊ Mileposts (8/17/06)
- ◊ Mileposts (2/9/06)
- Pipeline (8/17/06)
- Pipeline (2/9/06)



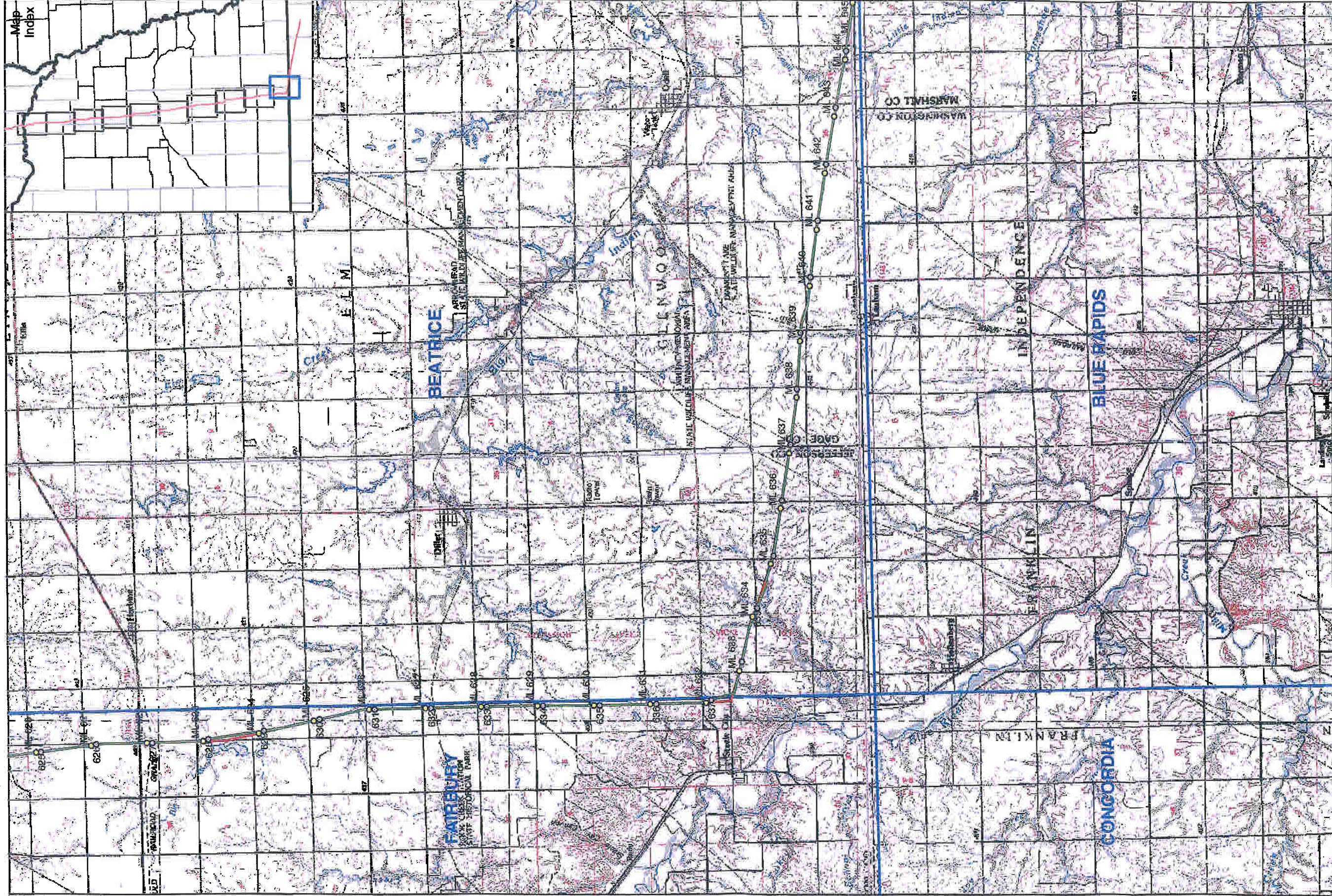
Keystone Pipeline Project  

 TransCanada  
 An Enbridge Company

Map 9 of 10  
 General Project Location  
 (Nebraska)

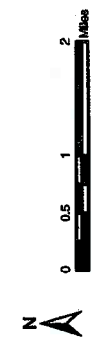
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Map Index

- ◊ Mileposts (8/17/06)
- ◊ Mileposts (2/9/06)
- Pipeline (8/17/06)
- Pipeline (2/9/06)



Keystone Pipeline Project  


Map 10 of 10  
 General Project Location  
 (Nebraska)

X:\proj\env\10082\_2006\_1\keyline\nebraska\_10082\_maps\nebraska\_10082\_maps\nebraska\_10082\_maps\_10082.mxd