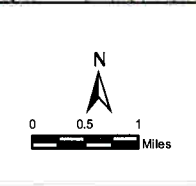


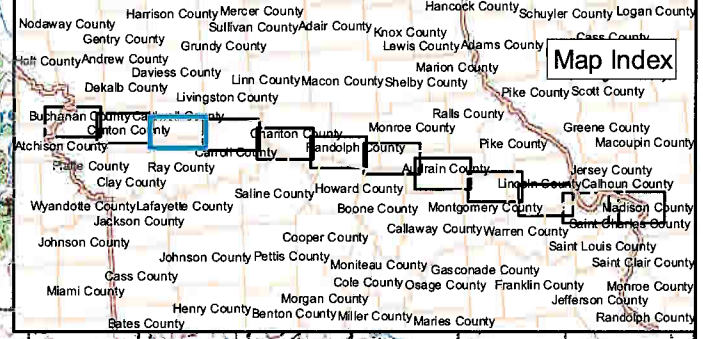
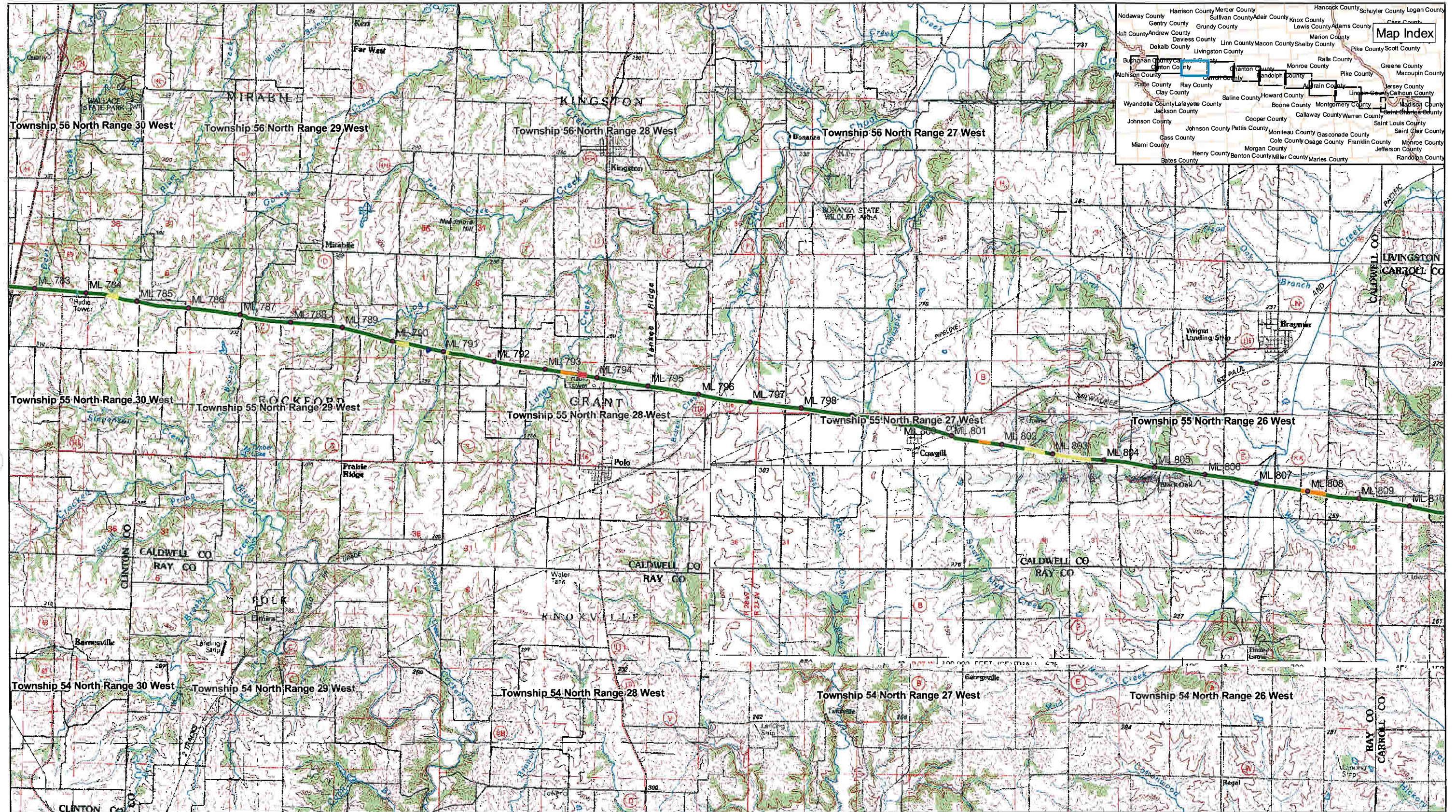


- DOS Filing Route
- Valve
- Pump station
- Powerline preferred route
- Powerline alternative route
- Mainline milepost
- Riparian
- Forests and Woodland
- Grassland
- Open Water
- Non-forested Emergent Wetland

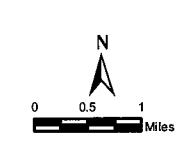


Keystone Pipeline Project

Map of 2 of 12
Non-agricultural
Habitat
(Missouri)

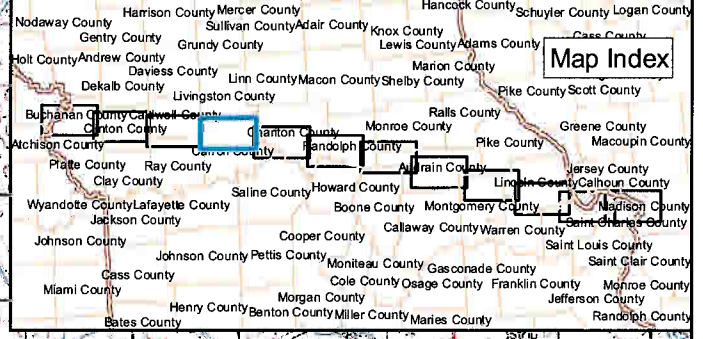
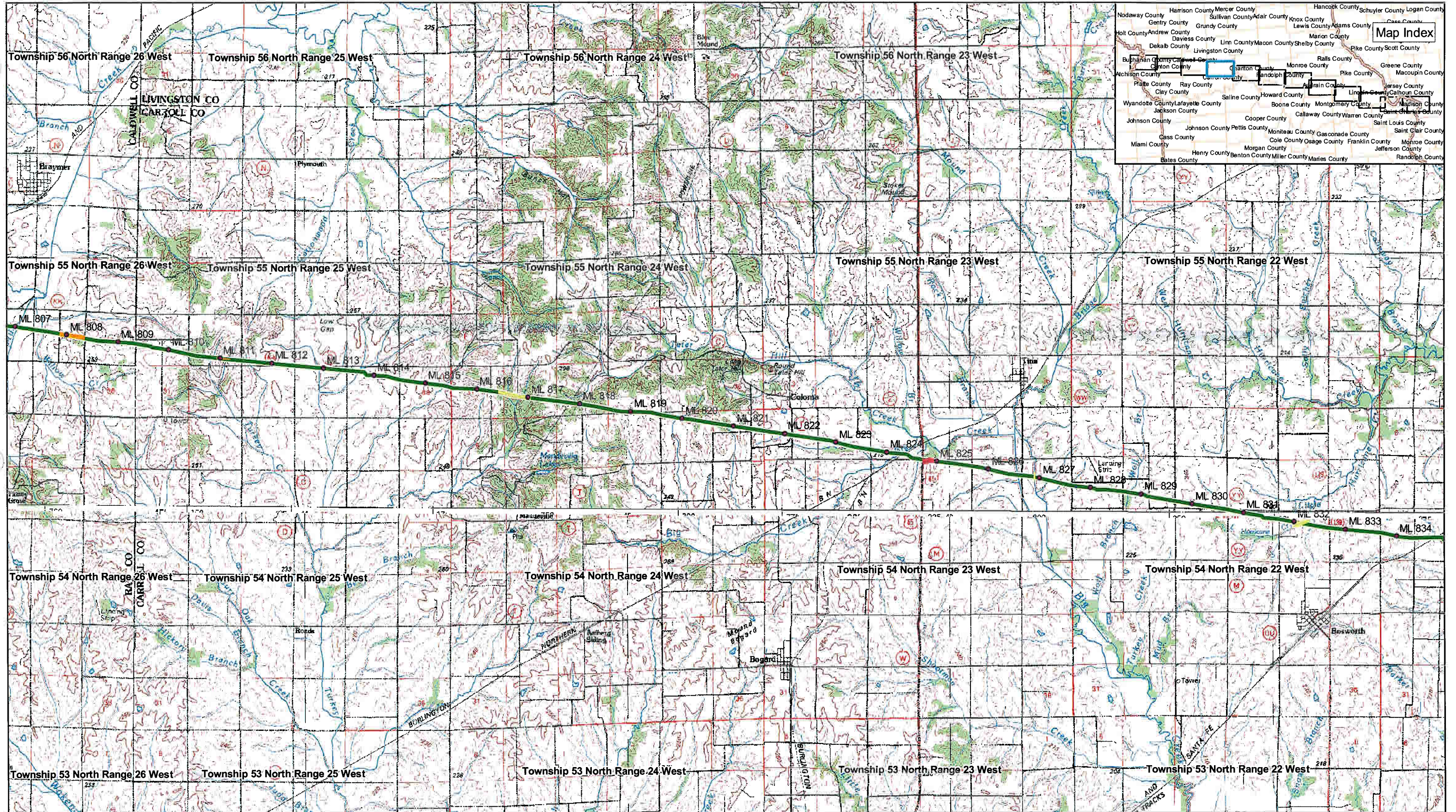


- DOS Filing Route
- ▲ Valve
- Pump station
- Powerline preferred route
- Powerline alternative route
- Mainline milepost
- Riparian
- Forests and Woodland
- Grassland
- Open Water
- Non-forested Emergent Wetland

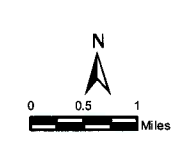


Keystone Pipeline Project

Map of 3 of 12
Non-agricultural
Habitat
(Missouri)

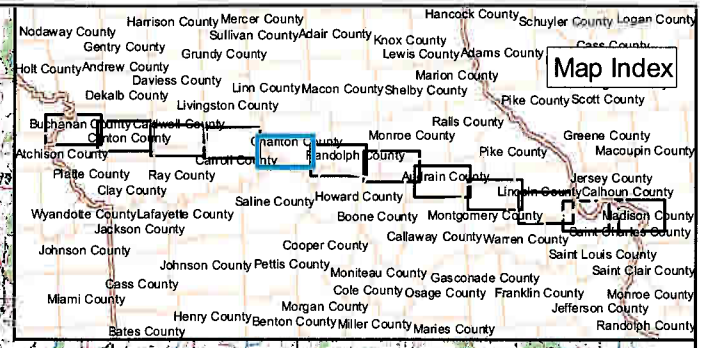
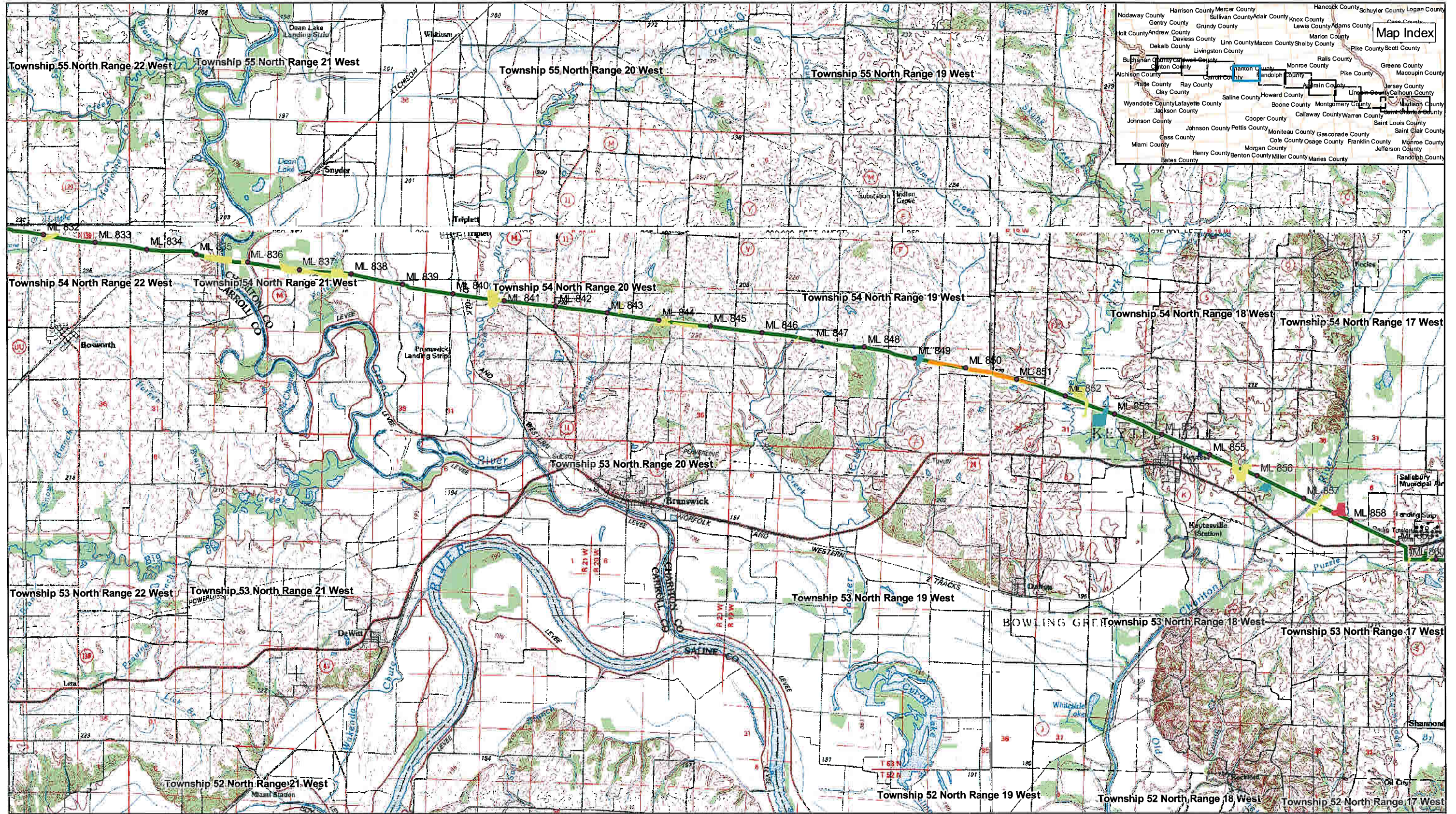


- DOS Filing Route
- Valve
- Pump station
- Powerline preferred route
- Powerline alternative route
- Mainline milepost
- Riparian
- Forests and Woodland
- Grassland
- Open Water
- Non-forested Emergent Wetland

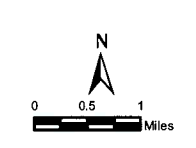


Keystone Pipeline Project

Map of 4 of 12
Non-agricultural
Habitat
(Missouri)

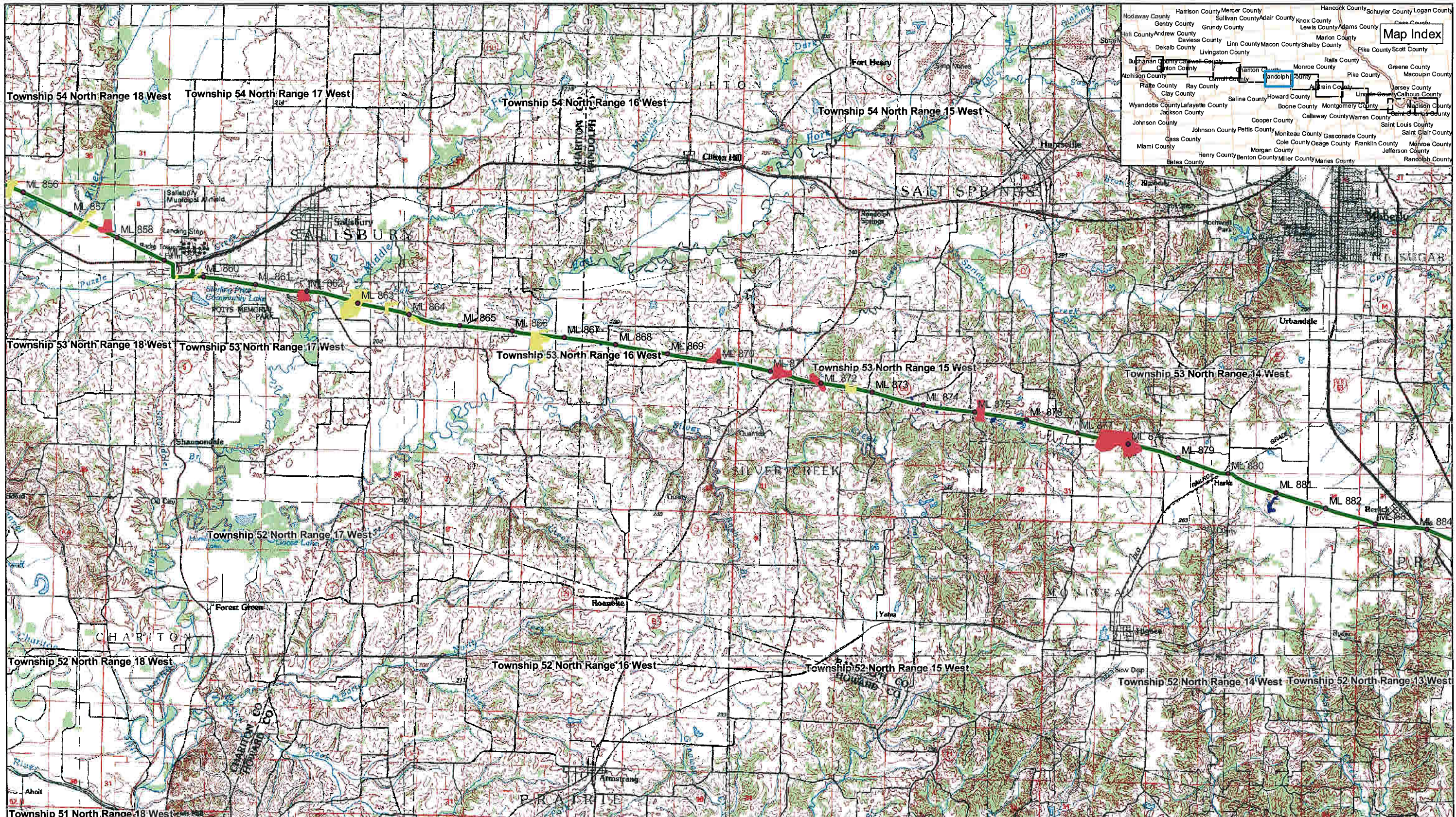
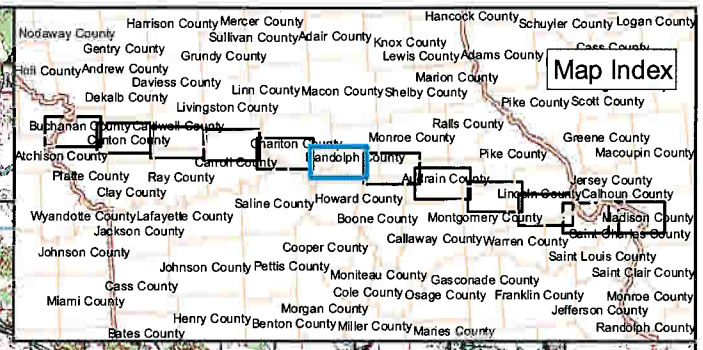


- DOS Filing Route
- ▲ Valve
- Pump station
- Powerline preferred route
- Powerline alternative route
- Mainline milepost
- Riparian
- Forests and Woodland
- Grassland
- Open Water
- Non-forested Emergent Wetland

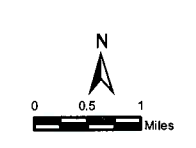


Keystone Pipeline Project

Map of 5 of 12
Non-agricultural
Habitat
(Missouri)

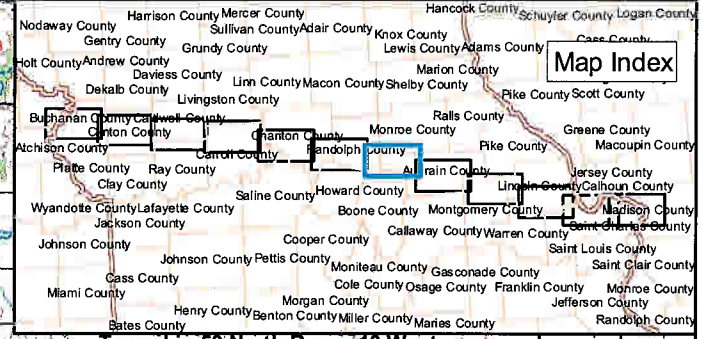
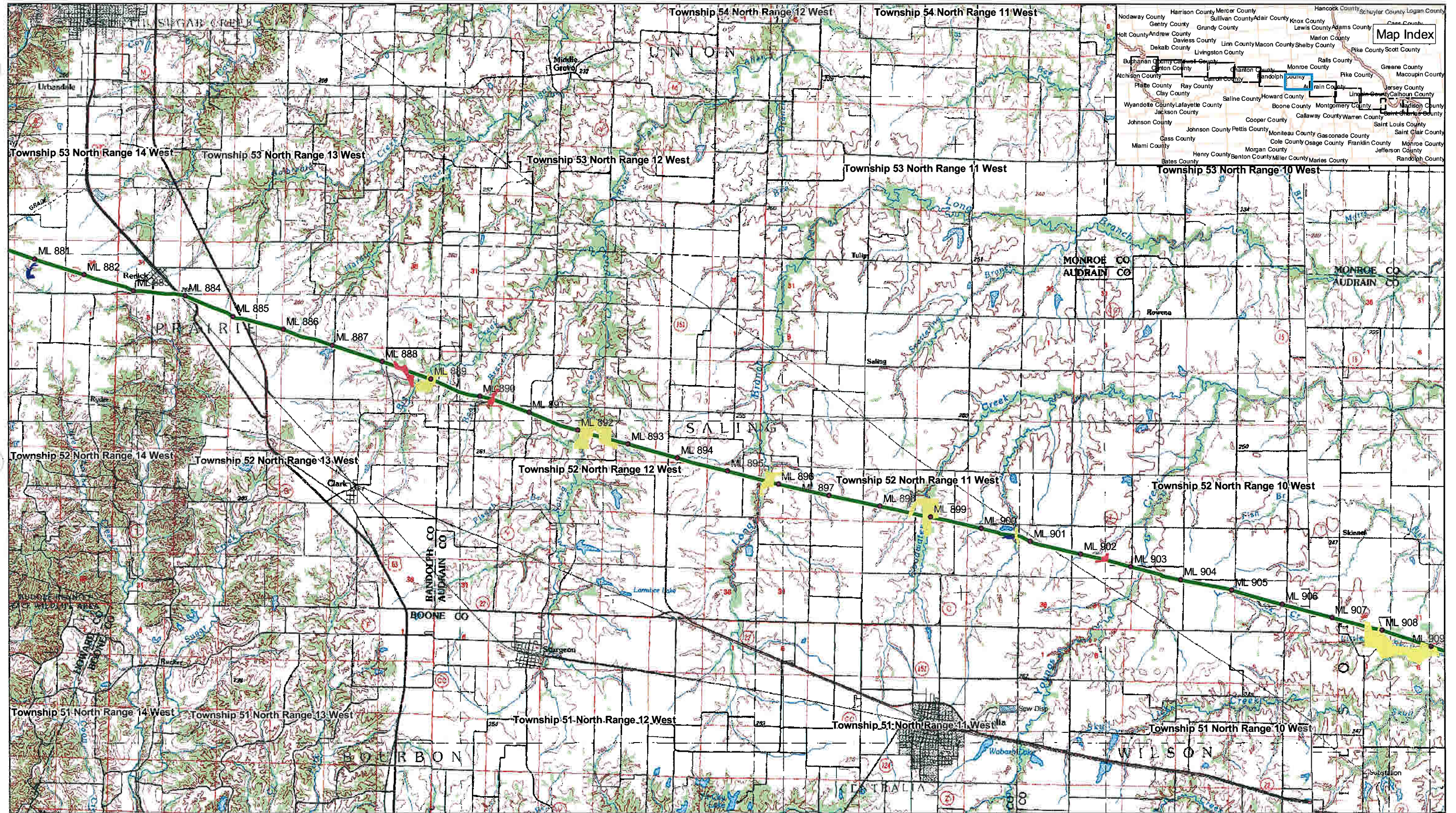


- DOS Filing Route
- Valve
- Pump station
- Powerline preferred route
- Powerline alternative route
- Mainline milepost
- Riparian
- Forests and Woodland
- Grassland
- Open Water
- Non-forested Emergent Wetland

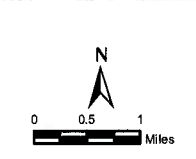


Keystone Pipeline Project
TransCanada
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Map of 6 of 12
 Non-agricultural
 Habitat
 (Missouri)

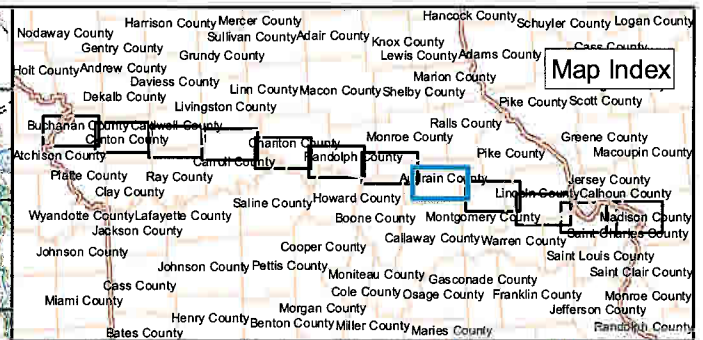
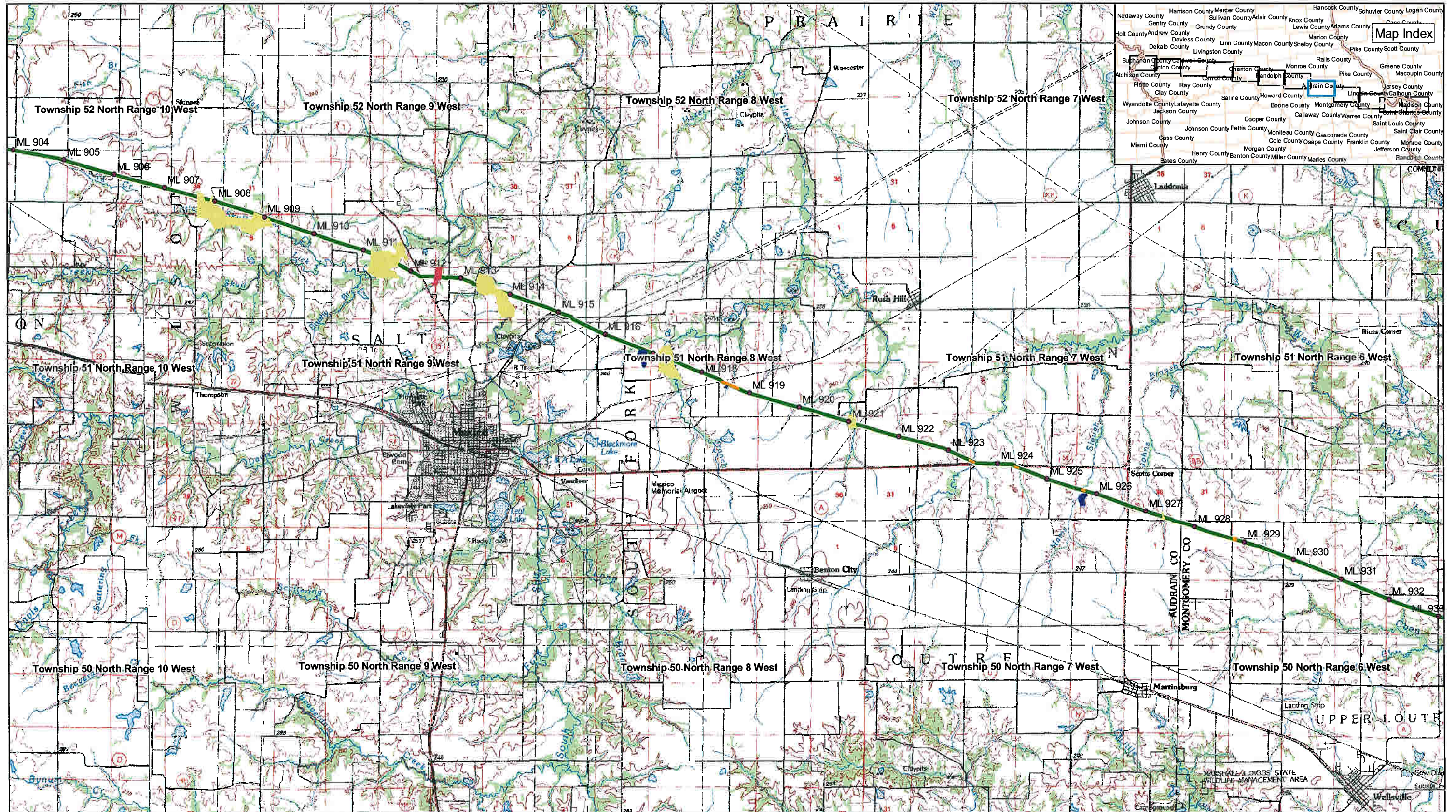


- DOS Filing Route
- Riparian
- ▲ Valve
- Forests and Woodland
- Pump station
- Grassland
- Powerline preferred route
- Open Water
- Powerline alternative route
- Non-forested Emergent Wetland
- Mainline milepost

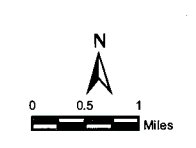


Keystone Pipeline Project
TransCanada
In business to deliver

Map of 7 of 12
 Non-agricultural
 Habitat
 (Missouri)

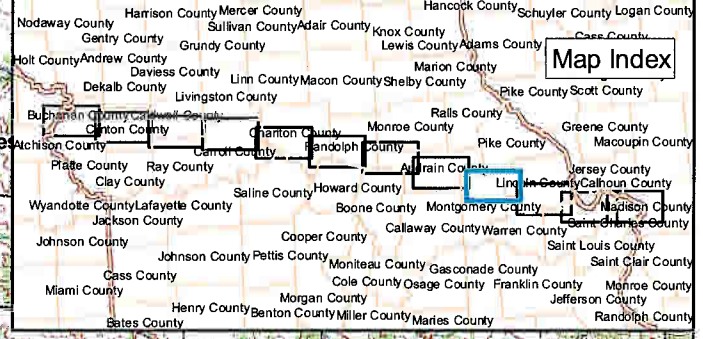
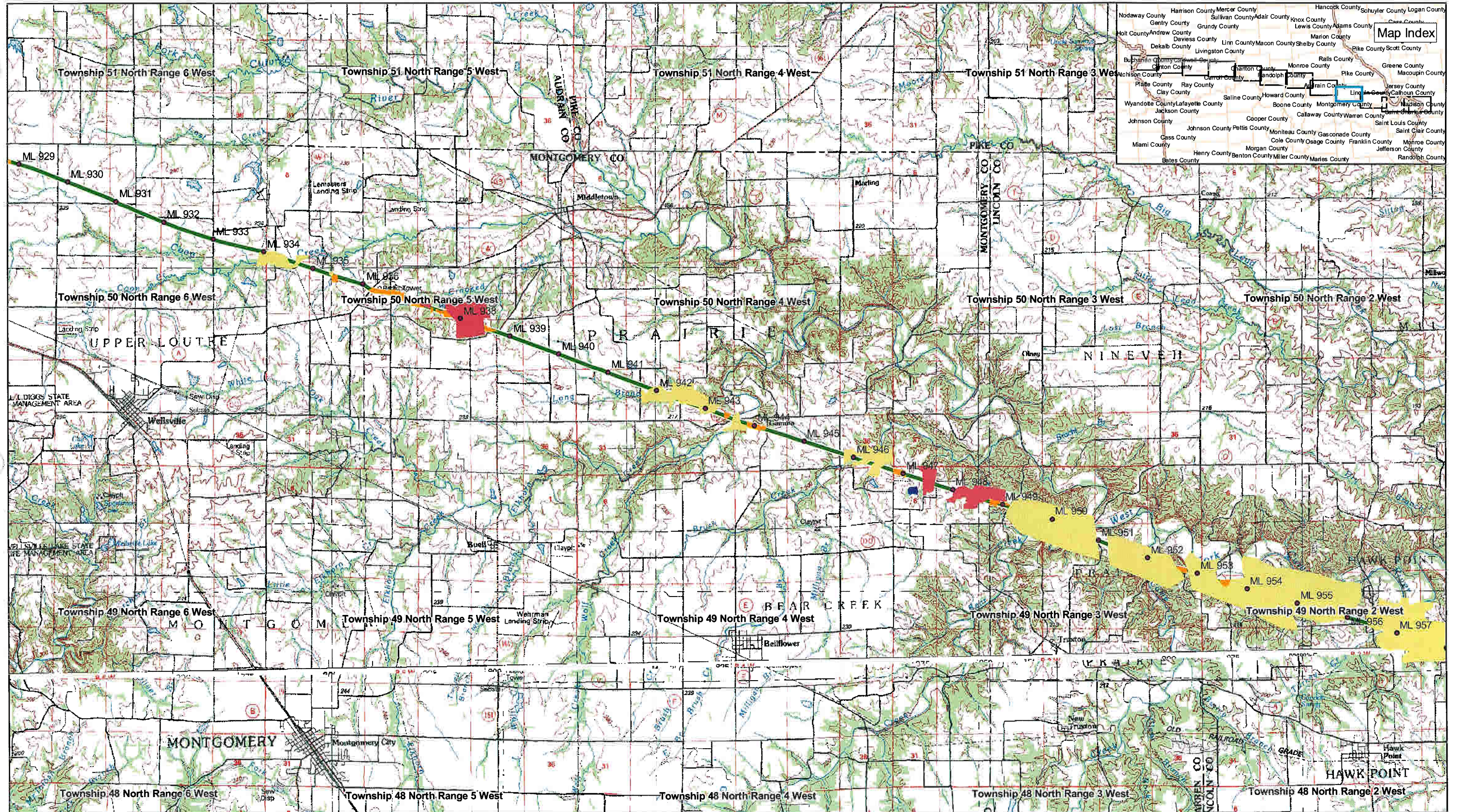


- DOS Filing Route
- Riparian
- Forests and Woodland
- Grassland
- Open Water
- Non-forested Emergent Wetland
- ▲ Valve
- Pump station
- Powerline preferred route
- Powerline alternative route
- Mainline milepost

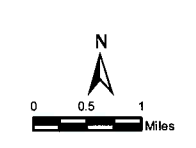


Keystone Pipeline Project
TransCanada
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Map of 8 of 12
 Non-agricultural
 Habitat
 (Missouri)

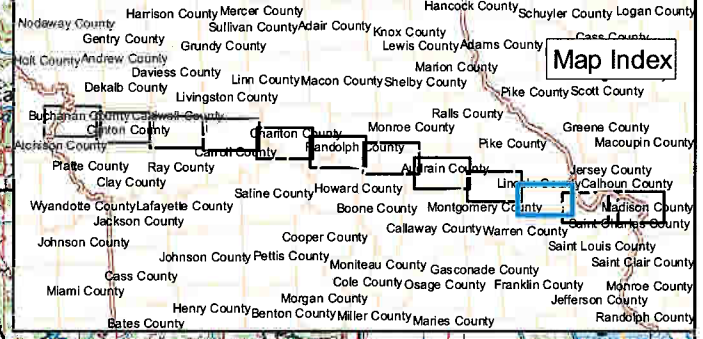
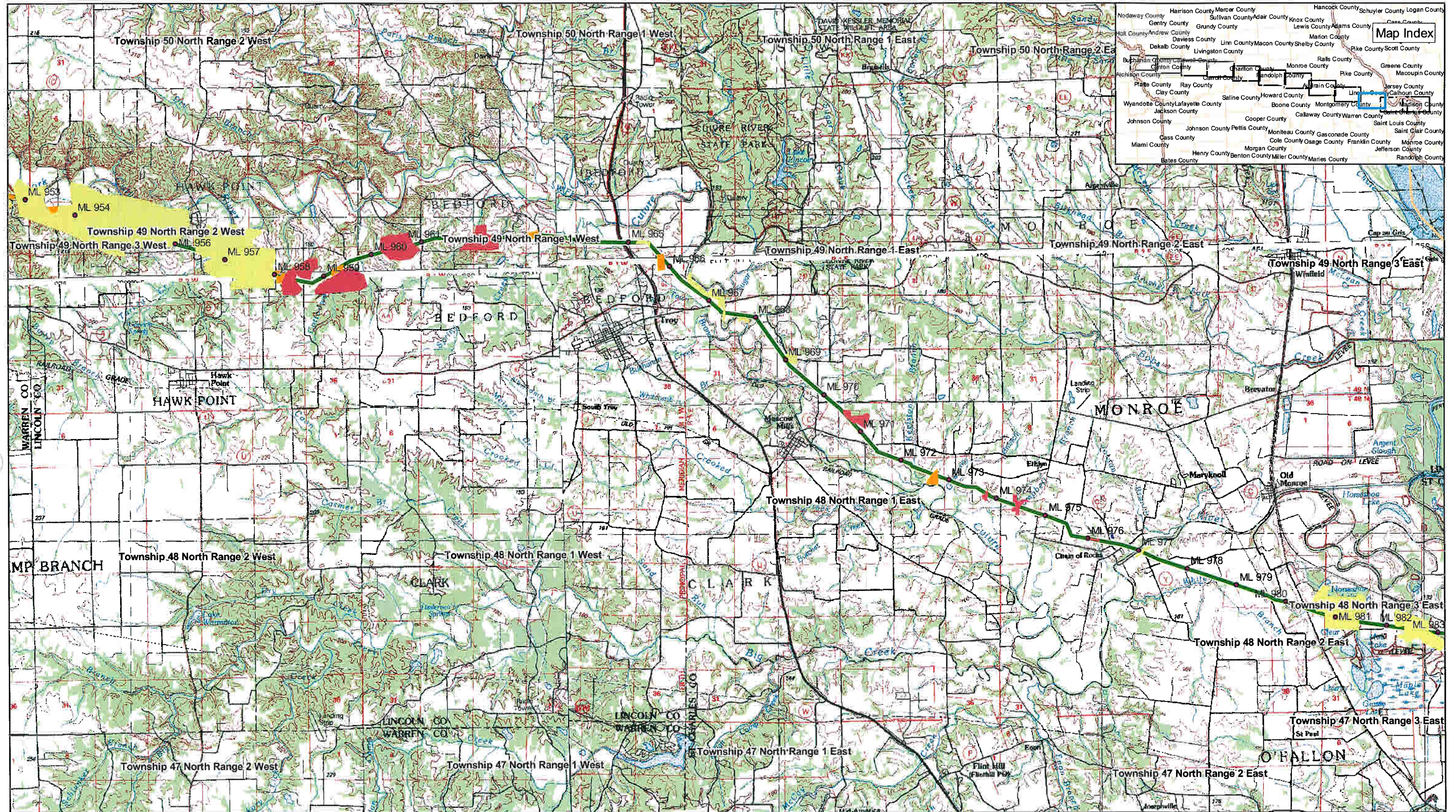


- DOS Filing Route
- Riparian
- ▲ Valve
- Forests and Woodland
- Pump station
- Powerline preferred route
- Grassland
- Powerline alternative route
- Open Water
- Mainline milepost
- Non-forested Emergent Wetland

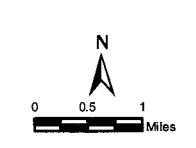


Keystone Pipeline Project

Map of 9 of 12
Non-agricultural
Habitat
(Missouri)

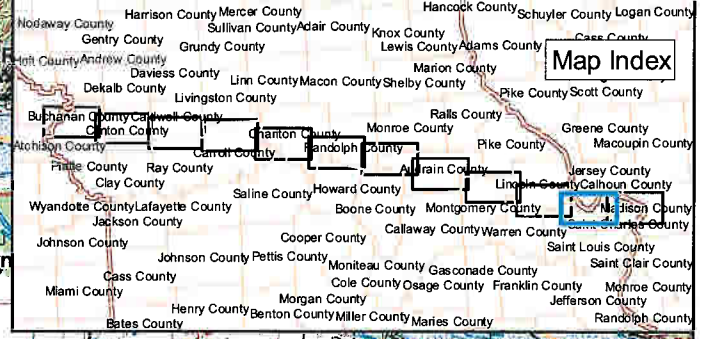
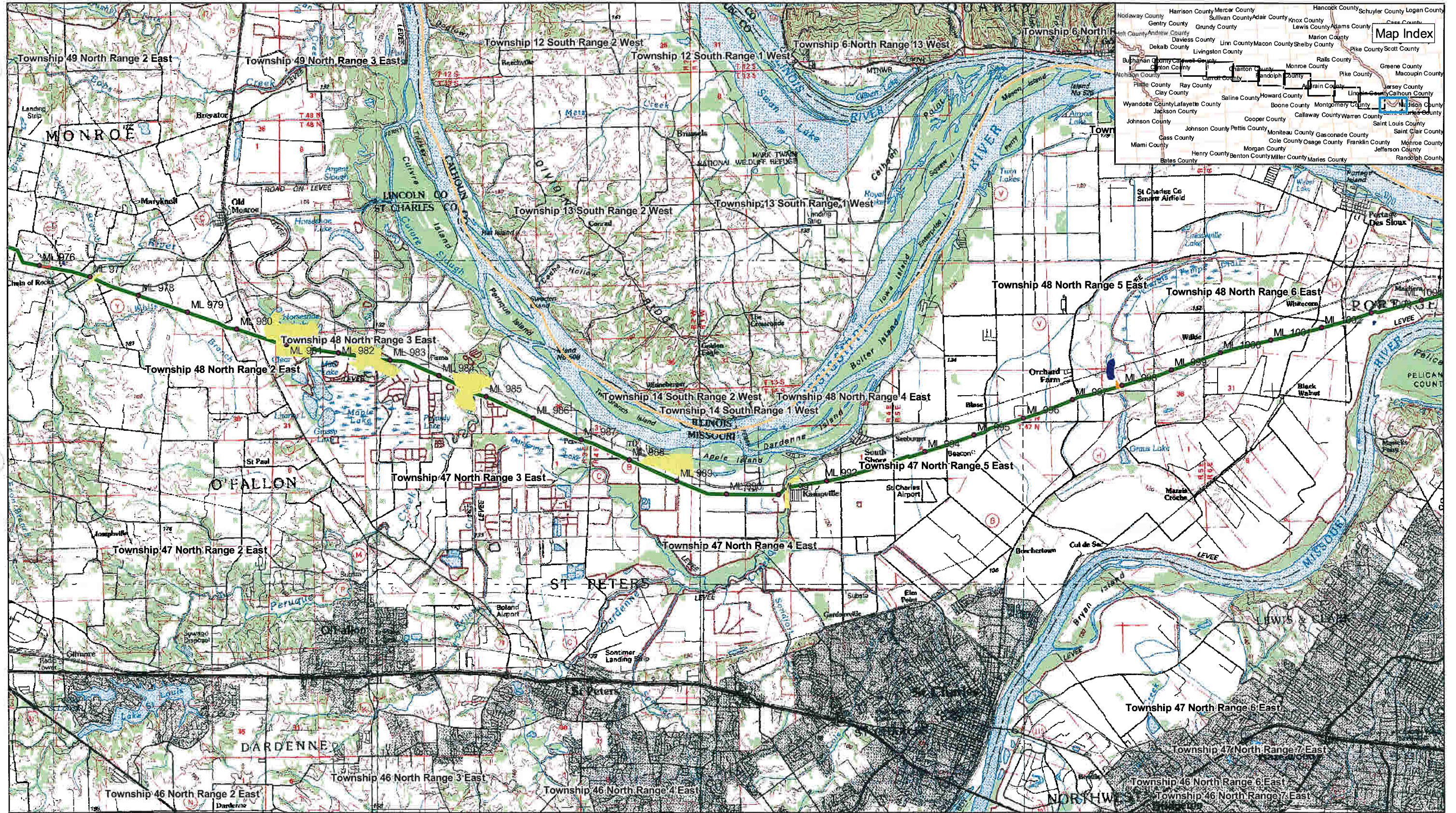


- DOS Filing Route
- Riparian
- Forests and Woodland
- ▲ Valve
- Grassland
- Open Water
- Pump station
- Non-forested Emergent Wetland
- Powerline preferred route
- Powerline alternative route
- Mainline milepost

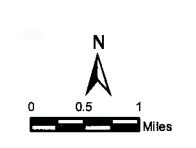


Keystone Pipeline Project

Map of 10 of 12
Non-agricultural
Habitat
(Missouri)



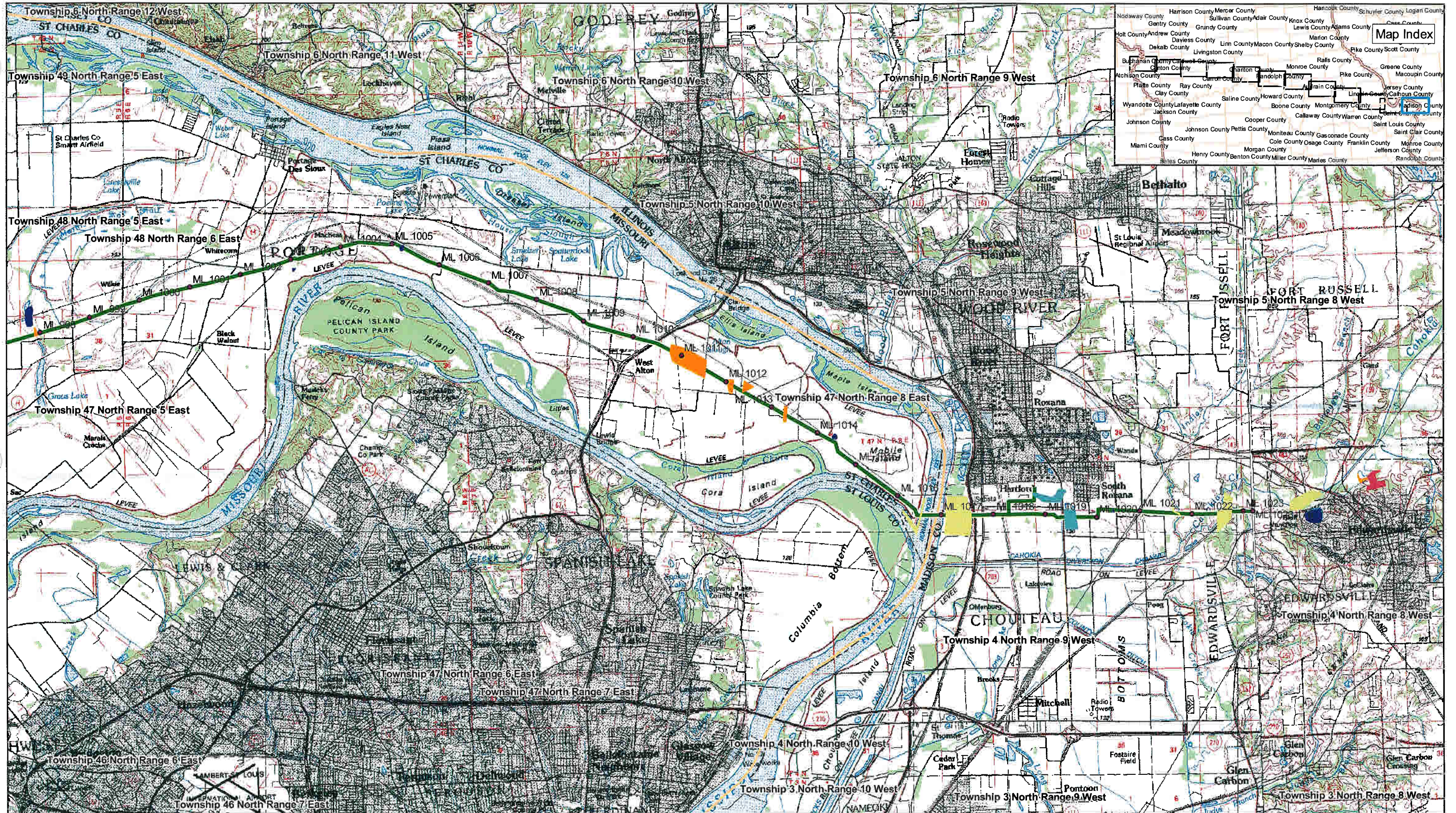
- DOS Filing Route
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- Mainline milepost
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Keystone Pipeline Project

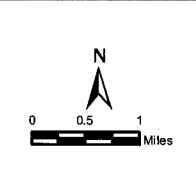
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Map of 11 of 12
Non-agricultural
Habitat
(Missouri)



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- DOS Filing Route
- Valve
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- Powerline preferred route
- Powerline alternative route
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- Riparian
- Forests and Woodland
- Grassland
- Open Water
- Non-forested Emergent Wetland



Keystone Pipeline Project
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Map of 12 of 12
Non-agricultural
Habitat
(Missouri)

CONFIDENTIAL

Stribley, Sara

From: Shannon Cave [Shannon.Cave@mdc.mo.gov]
Sent: Thursday, May 25, 2006 8:53 AM
To: Stribley, Sara
Cc: Doyle Brown
Subject: Keystone Mileposts



Milepost_MDC.dbf (2 KB) Milepost_HerRecs.dbf (11 KB) Milepost_Terr_COA.dbf (1 KB) Milepost_Aquatic_COA.dbf (2 KB) erstmts.dbf (4 KB) erstmts.prj (686 B) erstmts.shp (9 MB)



erstmts.shp.xml (10 KB) erstmts.shx (2 KB) Milepost_Spawn.dbf (1 KB) Upper Miss T&E.doc (43 KB)

I'm sorry to take so long to get this back to you * it turned out to take a little more work than anticipated, but mainly I've just been behind and focusing on urgent items while spending about half of the last month on the road. Anyway, attached are some DBF files that tie things more closely to your mileposts. Five additional files comprise the ERSTMTS.SHP shape, which provides an overlay of areas in which we have concerns about particular species issues * kind of a range map, helping show where prairie chickens, now perilously few, could possibly be found.

I used a 1.414 mile circular buffer around each mileposts rather than a 1 mile buffer around the centerline, so there may be slight differences from previous lists of records. I generally did not include Conservation lands and heritage records in the Missouri and Mississippi River unless they clearly relate to the proposed line. The Jentell Brees Access boundary appears to be less than 500 feet from the proposed line (so I include it) but Upper Mississippi Conservation Area lands are separated by almost a mile from the proposed route, and are typically islands and sloughs where construction or maintenance conditions would be undesirable for your work. Leaving out the big-river aquatic species should simplify matters until you get to the actual river crossings.

The Missouri and Mississippi Rivers and their flood plains are home to a number of species of state and federal concern, including pallid sturgeon, gray bats, Indiana bats, bald eagles, lake sturgeon, flathead chubs, various mussels and birds, etc. Terrestrial components of your project, if managed and operated to avoid runoff of sediment or pollutants, are unlikely to affect most of these species. However, especially at crossings you may need to place fill in or discharge within the flood banks, requiring "clean water" permits that would largely protect wildlife and plants as it protects human water use. Details of your crossing plans will need to consultation with USFWS regarding possible impacts to pallid sturgeon, mussel or tern habitats. A Word document listing state & federal endangered species recorded in the Upper Mississippi is also attached.

I hope this is helpful. Thank you for your patience!

Shannon D. Cave
Public Involvement Coordinator
Policy Coordination Unit
Missouri Department of Conservation
P. O. Box 180
Jefferson City, MO 65102
573-522-4115 X 3250
e-mail: Shannon.Cave@mdc.mo.gov

>>> "Stribley, Sara" <sstribley@ensr.aecom.com> 4/26/2006 5:27:30 PM >>>

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Shannon,

I couldn't remember if I sent you these shapefiles for the Keystone route. This is a point file of UTM 15 that can be placed over the line I sent you last week. See the email below for a better explanation. I'm so sorry for the delay. Thanks so much for your willingness to help!

Sara

-----Original Message-----

From: MacKinnon, Scott
Sent: Monday, April 24, 2006 3:58 PM
To: Stribley, Sara
Subject: RE:

Sara,

I have attached a point shapefile for mileposts that are within UTM 15. I think this should cover Shannon's needs. It does not have the centerline on this file, instead, it is just a point file that would just be placed on top of the centerline that was already supplied. However, if this does not work, we do have a Route created, but it is linear referenced in meters, not miles, when using the Route ID tool. Let me know of any questions/comments/clarifications.

SJM

-----Original Message-----

From: Stribley, Sara
Sent: Monday, April 24, 2006 2:26 PM
To: White, Todd; Paulson, Merlyn; MacKinnon, Scott
Subject: FW:

Do we have shapefiles of the Keystone route containing milepost markers along the centerline?

Thanks,
Sara

-----Original Message-----

From: Shannon Cave [mailto:Shannon.Cave@mdc.mo.gov]
Sent: Monday, April 24, 2006 8:07 AM
To: Stribley, Sara
Subject: Re:

Thanks, but these files show the centerline of the route without mileposts identified. To match your mile markers to our data, I will need identifiable points on the line at each milepost.

>>> "Stribley, Sara" <sstribley@ensr.aecom.com> 4/21/2006 2:30 PM >>>

Shannon,

Here are shapefiles for the Keystone line in Missouri. I think part of Missouri may fall in another UTM zone. I'll send that in an email following this one! Milepost markers would be very helpful for T&E species!!!!

Thanks,
Sara

Sara Stribley
Staff Specialist
ENSR Corporation
1601 Prospect Pkwy
Fort Collins, CO 80525
970.493.8878 ext. 168
sstribley@ensr.com

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MISSOURI DEPARTMENT OF CONSERVATION



Headquarters

2901 West Truman Boulevard, P.O. Box 180, Jefferson City, Missouri 65102-0180
Telephone: 573/751-4115 ▲ Missouri Relay Center: 1-800-735-2966 (TDD)

JOHN D. HOSKINS, Director

April 27, 2006

Ms. Sara Stribley
Staff Specialist
ENSR Corporation
1601 Prospect Pkwy
Fort Collins, CO 80525

Dear Ms. Stribley,

The Missouri Department of Conservation (MDC) appreciates the opportunity to provide additional comments related to federal endangered or threatened (including Candidate) species that may be present within the proposed TransCanada pipeline route. Please contact the U.S. Fish and Wildlife Service for further review on possible impacts and consultation issues.

Indiana bat (*Myotis sodalist*; federal and state listed endangered) and Gray bats (*myotis grisescens*; federal and state listed endangered) are likely to occur along the route. Favored roosts are large diameter (>9" dbh; best are >21" dbh) dead oaks and hickories, and living shagbark hickory. Other tree species such as elm, cottonwood, ash, and maple, if they have exfoliating bark, also may be used as roosts. Indiana bats especially prefer snags standing near forest edges or where tree canopies are more open. Projects should avoid or minimize the removal of potential roost trees from riparian zones or from woodlots within 0.6 mile of perennial streams or permanent water. If removal of potential roost trees is unavoidable, it should be done when Indiana bats are not likely to be present (between September 30 and April 1).

Decurrent false aster (*boltonia decurrens*; federal threatened, state endangered) may occur near the Missouri/Mississippi River confluence in moist soils subject to periodic flooding. This species may appear in previously undocumented locations as water-borne seeds are deposited during periods of high water. Ditch banks and flood-prone areas of agricultural fields can support populations of decurrent false aster when shading and competition from other species is minimal. Projects in areas where decurrent false aster is likely to occur should include a survey during the flowering period (August-October) to determine the presence of the species.

Pallid sturgeons (*scaphirhynchus albus*; federal and state endangered) are big river fish that may range widely in the Mississippi and Missouri River system (including parts of major tributaries). Because the preferred habitat and range of the species are unknown, any project that modifies big river habitat or impacts water quality should consider the possible impact to pallid sturgeon populations.

Topeka Shiners (*notropis Topeka*; federal and state endangered) were historically widespread in the northwest and central regions of Missouri. They live in pools of small, intermittent

COMMISSION

STEPHEN C. BRADFORD
Cape Girardeau

CHIP MCGEEHAN
Marshfield

CYNTHIA METCALFE
St. Louis

LOWELL MOHLER
Jefferson City

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Ms. Sara Stribley
Page Two
April 27, 2006

headwater prairie-type streams. Spawning takes place from late spring to late summer and several streams along the project route currently have restrictions from May 15 to July 31. See the streams listed in a table provided by MDC in the Heritage Review Report provided to ENSR on January 27, 2006.

If you need additional information, you can contact me at (573) 522-4115, ext. 3355, or Doyle.brown@mdc.mo.gov.

Sincerely,



DOYLE F. BROWN
POLICY COORDINATOR

Stribley, Sara

From: Stribley, Sara
Sent: Tuesday, April 18, 2006 3:50 PM
To: 'Shannon Cave'
Subject: RE: Keystone Heritage Review Report

Shannon,
Sorry, but I have another request!!! The MO NHP data only has Township/Range data for some of the SSS entries. Would it be possible to get lat/long or UTM X/Y coordinates for the special status species within a 1 mile radius of the centerline? We are concerned about knowing these locations so that we can avoid impacts as much as possible to any of these species! An alternative, if you are willing, would be to send you maps with the project mileposts, and you could give us mileposts as to where we might come into contact with or cross critical habitat for these species? Does any of this sound possible?
Thanks so much for your help! It is much appreciated!
Sara

Sara Stribley
Staff Specialist
ENSR Corporation
1601 Prospect Pkwy
Fort Collins, CO 80525
970.493.8878 ext. 168
sstribley@ensr.com

-----Original Message-----
From: Shannon Cave [mailto:Shannon.Cave@mdc.mo.gov]
Sent: Tuesday, April 18, 2006 9:09 AM
To: Stribley, Sara
Subject: Re: Keystone Heritage Review Report

I hope this the file you need * let me know to confirm receipt or so I can look further

Shannon D. Cave
Public Involvement Coordinator
Policy Coordination Unit
Missouri Department of Conservation
P. O. Box 180
Jefferson City, MO 65102
573-522-4115 X 3250
e-mail: Shannon.Cave@mdc.mo.gov

>>> "Stribley, Sara" <sstribley@ensr.aecom.com> 4/14/2006 11:48 AM >>>
Hi Shannon,
I am reviewing the Missouri Heritage Review Report that you sent to Charles Johnson at ENSR (compiled 1/27/06) regarding the TransCanada Keystone Pipeline Project. We are trying gather our information together on T&E species in order to compile field survey schedules. I have looked all over our office and can not seem to find the disk that was sent with the report containing the Excel file (HERITAGERECORDS) with the following worksheets:

- buffering of pipeline by one mile but including records ranked below S2
- buffering the pipeline by five miles, all records
- buffering by six miles

Is there a way you could possibly send those files to us again? The bottom of the Report states that these files were located at:

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N:\Heritage\JANFEB_06\TransCanadaPipeline\Johnson_TansCan_Pipeline_rpt.d
oc.??? We have the species of concern within 1 mile of the proposed
project, but if we could get the other information that would be
excellent. If you need to rebill us for this work, please do what is
necessary! I have attached a copy of the report to aid you in trying to
track down the information.
Thanks for your help,
Sara

Sara Stribley
Staff Specialist
ENSR Corporation
1601 Prospect Pkwy
Fort Collins, CO 80525
970.493.8878 ext. 168
sstribley@ensr.com

Stribley, Sara

From: Shannon Cave [Shannon.Cave@mdc.mo.gov]
Sent: Tuesday, April 18, 2006 9:09 AM
To: Stribley, Sara
Subject: Re: Keystone Heritage Review Report



HeritageRecords.xls
(115 KB)

I hope this the file you need * let me know to confirm receipt or so I can look further . . .

Shannon D. Cave
Public Involvement Coordinator
Policy Coordination Unit
Missouri Department of Conservation
P. O. Box 180
Jefferson City, MO 65102
573-522-4115 X 3250
e-mail: Shannon.Cave@mdc.mo.gov

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Thanks for your help,
Sara

Sara Stribley
Staff Specialist
ENSR Corporation
1601 Prospect Pkwy
Fort Collins, CO 80525
970.493.8878 ext. 168
sstribley@ensr.com

Stribley, Sara

From: Stribley, Sara

Sent: Friday, April 14, 2006 10:46 AM

To: ~~Shannon.Cave@mdc.gov~~ resent to Shannon.Cave@mdc.mo.gov

Subject: Keystone Heritage Review Report

Hi Shannon,

I am reviewing the Missouri Heritage Review Report that you sent to Charles Johnson at ENSR (compiled 1/27/06) regarding the TransCanada Keystone Pipeline Project. We are trying gather our information together on T&E species in order to compile field survey schedules. I have looked all over our office and can not seem to find the disk that was sent with the report containing the Excel file (HERITAGERECORDS) with the following worksheets:

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Thanks for your help,
Sara

Sara Stribley
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1601 Prospect Pkwy
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sstribley@ensr.com

3/27/06
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4/10/06
4/11/06
4/12/06
4/13/06

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FOR INTERNAL KEYSTONE PROJECT USE ONLY

TransCanada – Keystone Pipeline Contact Summary Form

Location of Meeting ENSR
Date/Time of Meeting 4/12/06
Keystone Team Member(s) Sara Stribley

Contact Information:

Name	Doyle Brown
Title	Policy Coordinator
Organization	Missouri Dept. of Conservation
Address	P.O. Box 180 Jefferson City, MO 65102
County	
Phone	573-751-4115
E-mail address	Doyle.Brown@mdc.mo.gov

Meeting Information:

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

Issue: Sensitive Species Consultation Letter Follow-up

Concern Level: High___Moderate___Low___

Description:

I spoke with Doyle Brown today to follow up with the MDC on the sensitive species consultation letter we had sent them. I asked if Doyle had received our letter, and he stated that he was not sure if he had, but that he would double check. He requested that I send him an email regarding our request and that he would put something together for us on sensitive species for the Keystone project. After our phone conversation, I sent him the attached email. Doyle's reply is included in the attached email documentation.

See: Re: MO T&E Species Information Request for the TransCanada Keystone Pipeline Project

Issue: _____ **Concern Level:** High___Moderate___Low___

Description:

Stribley, Sara

From: Doyle Brown [Doyle.Brown@mdc.mo.gov]
Sent: Wednesday, April 12, 2006 12:50 PM
To: Stribley, Sara
Subject: Re: T&E Species Information Request for the TransCanadaKeystone Pipeline Project

Sara,

Thanks for the call today. I have not heard from any ENSR folks and thought perhaps you had forgotten me. I will put together a letter from MDC regarding T & E issues in Missouri. We had talked briefly about spawning issues for the Topeka Shiner on six stream crossings. For your information, the Army Corps has a regional condition for 404 permits. This is how our concern about a species becomes regulatory.

Seasonal Restrictions for Activities Proposed in Spawning Areas (Applicable To All NWP's). In addition to the requirements of NWP general condition 20, for any regulated activity, the following specific seasonal restrictions apply. Between the closed dates listed in the Missouri Combined Stream Spawning List, the permittee must not excavate from or discharge into the listed waters.

The list of waters with seasonal restrictions is available on request from the Corps or at <http://www.nwk.usace.army.mil/regulatory/gravel.txt>(Missouri Combined Stream Spawning Season List).

Doyle

> "Stribley, Sara" <sstribley@ensr.aecom.com> 04/12/06 11:46 AM >>>

Hi Doyle,

Thanks again for speaking with me earlier regarding ENSR's request on T&E species (request letter dated 1/24/06) along the TransCanada Keystone Pipeline route. We are trying to make sure that we have a comprehensive list of special status species for each state that the proposed route crosses through. We have received some information from the MO NHP, but would also appreciate any additional input or concerns on T&E species that you could provide. If you need any further project information, please let me know and I would be happy to try and get that to you! Thanks again for your help.

Sincerely,
Sara Stribley

Sara Stribley
Staff Specialist
ENSR Corporation
1601 Prospect Pkwy
Fort Collins, CO 80525
970.493.8878 ext. 168
sstribley@ensr.com

Doyle F. Brown
Policy Coordinator
Missouri Department of Conservation
P.O. Box 180
2901 West Truman Blvd.
Jefferson City, MO 65109
(573) 522-4115 Ext 3355
Doyle.brown@mdc.mo.gov

4/12/2006

Stribley, Sara

From: Stribley, Sara

Sent: Wednesday, April 12, 2006 10:46 AM

To: 'doyle.brown@mdc.mo.gov'

Subject: T&E Species Information Request for the TransCanada Keystone Pipeline Project

Hi Doyle,

Thanks again for speaking with me earlier regarding ENSR's request on T&E species (request letter dated 1/24/06) along the TransCanada Keystone Pipeline route. We are trying to make sure that we have a comprehensive list of special status species for each state that the proposed route crosses through. We have received some information from the MO NHP, but would also appreciate any additional input or concerns on T&E species that you could provide. If you need any further project information, please let me know and I would be happy to try and get that to you! Thanks again for your help.

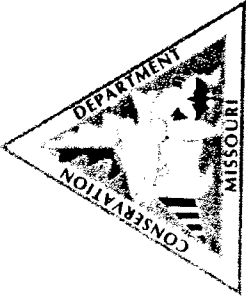
Sincerely,
Sara Stribley

Sara Stribley
Staff Specialist
ENSR Corporation
1601 Prospect Pkwy
Fort Collins, CO 80525
970.493.8878 ext. 168
sstribley@ensr.com

From:
Sent:
To:
Subject:

Hi Doyle,
Thanks again for speaking with me earlier regarding ENSR's request on T&E species (request letter dated 1/24/06) along the TransCanada Keystone Pipeline route. We are trying to make sure that we have a comprehensive list of special status species for each state that the proposed route crosses through. We have received some information from the MO NHP, but would also appreciate any additional input or concerns on T&E species that you could provide. If you need any further project information, please let me know and I would be happy to try and get that to you! Thanks again for your help.

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970.493.8878 ext. 168
sstribley@ensr.com



Missouri Department of Conservation
Policy Coordination Unit
P. O. Box 180
Jefferson City, MO 65102
573-522-4115 X 3250 -- Shannon.Cave@mdc.mo.gov

Heritage Review Report

Mr. Charles Johnson
ENSR Corporation
1601 Prospect Parkway
Fort Collins, Colorado 80525-9769
Attach: BMPS for Indiana Bats and Decurrent
False Aster
c: Doyle Brown

Project type: Oil Transmission System
Location: See map and CD
County: Buchanan, Clinton, Caldwell, Carroll, Chariton, Randolph, Audrain,
Montgomery, Lincoln, St. Charles
Described in query as: TransCanada 1,830-mile-long transmission system
Date query received: January 26, 2006

Conservation records concerning public lands and sensitive resources known to be near and possibly affected by the proposed project.

This is not a site clearance letter, but a report of Missouri Department of

Prepared by:

27-Jan-06

Species/habitats with Federal and State concerns: The table on the next page (over) uses a number of codes, lists only species ranked S2 or rater, and applies to a corridor one-mile wide centered on the shapefile provided (CL_UTM15_MERGE_ENSR_012306_MO_SHP). Since your letter requested a 5-mile buffer, I attach a disk with Excel file (named HERITAGERECORDS) including three worksheets:

- as follows, buffering the pipeline by one mile but including records ranked below S2;
- buffering the pipeline by five miles, all records;
- buffering by six miles (that is, buffering the shape file CL_UTM15_012306_1MI_BUFFER_MO_SHP by 5 miles).

FEDERAL STATUS is derived from the Endangered Species Act, administered by the U.S. Fish and Wildlife Service. The ESA provides federal protection for plants and animals listed as: E = Endangered, T = Threatened, C = Candidate, PE = Proposed Endangered for Federal listing.
STATE STATUS is either blank or E, for "endangered" as defined in the Wildlife Code of Missouri.
STATE RANKS refer to species tracked but not listed:

- S1=Critically imperiled in the state because of extreme rarity or because of some factor(s) making it especially vulnerable to extirpation (typically 5 or fewer occurrences or very few remaining individuals)
- S2=Imperiled in the state because of rarity or because of some factor(s) making it very vulnerable to extirpation (6 to 20 occurrences or few remaining individuals or acres)
- S3=Rare and uncommon in the state. (21 to 100 occurrences)
- S4=Widespread, abundant, and apparently secure in state, with many occurrences, but the species is of long-term concern (usually more than 100 occurrences)
- S5=Demonstrably widespread, abundant, and secure in the state, and essentially ineradicable under present conditions
- SU=Unrankable: Possibly in peril in the state, but status uncertain; need more information.
- S?=Unranked: Species is not yet ranked in the state.

Scientific Name	Common Name	Federal Status	State Status	State Rank	Quadrangle	County	Last record	Sec	Twp/Rng
<i>Boltonia decurrens</i>	Decurrent False Aster	T	E	S1	Columbia Bottom	St Charles	1997-09		
<i>Boltonia decurrens</i>	Decurrent False Aster	T	E	S1	Columbia Bottom	St Charles	1991-10-22		
<i>Boltonia decurrens</i>	Decurrent False Aster	T	E	S1	Alton (IL)	St Charles	1994-09-21		
<i>Boltonia decurrens</i>	Decurrent False Aster	T	E	S1	Alton (IL)	St Charles	1994-09-21		
<i>Boltonia decurrens</i>	Decurrent False Aster	T	E	S1	Alton (IL)	St Charles	1997-09		
<i>Boltonia decurrens</i>	Decurrent False Aster	T	E	S1	Alton (IL)	St Charles	1996-09-20		
<i>Boltonia decurrens</i>	Decurrent False Aster	T	E	S1	Alton (IL)	St Charles	1994-09-22		
<i>Boltonia decurrens</i>	Decurrent False Aster	T	E	S1	Elsah (IL)	St Charles	1999-10-27		
<i>Boltonia decurrens</i>	Decurrent False Aster	T	E	S1	Columbia Bottom	St Charles	2002-12-11		
<i>Boltonia decurrens</i>	Decurrent False Aster	T	E	S1	Wood River (IL)	St Charles	2003-10-01		
<i>Tympanuchus cupido</i>	Greater Prairie-chicken		E	S1	Tulip	Audrain	1988	24	T52N R12W
<i>Tympanuchus cupido</i>	Greater Prairie-chicken		E	S1	Rowena	Audrain	1988	27	T52N R10W
<i>Circus cyaneus</i>	Northern Harrier		E	S2	Tina	Carroll	1990	7	T54N R22W
Wet bottomland prairie				S1	O'Fallon	St Charles	1998-01-28	2	T47N R3E
<i>Schoenoplectus saximontanus</i>	A Bulrush			S1	Columbia Bottom	St Charles	1992-10-16		
Wet-mesic bottomland prairie				S1	O'Fallon	St Charles	1998-01-28	1	T47N R3E
Wet bottomland prairie				S1	Salisbury	Chariton	1999-06-29	12	T53N R17W
Wet bottomland prairie				S1	O'Fallon	St Charles	1998-01-28	32	T48N R3E
<i>Echinochloa walteri</i>	A Barnyard Grass			S1	Winfield	St Charles	1999-10-01	32	T48N R3E
<i>Najas gracillima</i>	Thread-like Naitad			S2	Columbia Bottom	St Charles	1992-08-02		
Freshwater marsh				S2	Winfield	St Charles	1998-01-28	32	T48N R3E
Freshwater marsh				S2	Winfield	St Charles	1998-01-28	30	T48N R3E
Shrub swamp				S2	O'Fallon	St Charles	1986-04-01	1	T47N R3E
Shrub swamp				S2	O'Fallon	St Charles	1998-01-28	32	T48N R3E
<i>Gallinula chloropus</i>	Common Moorhen			S2	Halls	Buchanan	1999-06-25	14	T56N R36W
<i>Bergia texana</i>	Bergia			S2	Alton (IL)	St Charles	1986-09-26		
<i>Lemna trisulca</i>	Star Duckweed			S2	O'Fallon	St Charles	1986-07-16	32	T48N R3E
<i>Asio flammeus</i>	Short-eared Owl			S2	Columbia Bottom	St Charles	1998		
Freshwater marsh				S2	O'Fallon	St Charles	1998-01-28	32	T48N R3E
<i>Notropis buchmanii</i>	Ghost Shiner			S2	Elsah (IL)	St Charles	1982		
<i>Bergia texana</i>	Bergia			S2	Columbia Bottom	St Charles	1991-08-24		
<i>Bergia texana</i>	Bergia			S2	Columbia Bottom	St Charles	1991-09-02		
<i>Hybognathus placchus</i>	Plains Minnow			S2	Elsah (IL)	St Louis	1982-09-27	4	T47N R6E
<i>Obovaria olivaria</i>	Hickorynut			S2S3	Wood River (IL)		1988-08-26		

Major concerns would include:

- minimizing affects to decurrent false aster in the Missouri and Mississippi floodplains of St. Charles County. More information is on attached best management sheet, also available at <http://mdc.mo.gov/documents/nathis/endangered/aster.pdf>;
- revegetation with native species, especially in areas where greater prairie-chickens may occur;
- proper management for Indiana bats along the entire route, primarily preserving large trees, living or dead, that may serve as summer roost sites. More information is on attached best management sheet, also available at <http://www.mdc.mo.gov/documents/nathis/endangered/indianabat.pdf>.
- proper management of river and stream crossings, especially the spawning streams cited below. Best management recommendations relating to streams and rivers may be found at <http://www.mdc.mo.gov/documents/nathis/endangered/streams.pdf>

MILES	STREAMNAME	CRITERIA_1	CRITERIA_2	CRITERIA_3	FROMLOC	TOLOC	FROM	TO
13.0	Big Sugar Creek	remnant historic habitat	outstanding National or State water	unique community or diversity	Mouth	Hwy B	March	June 15th
7.4	Brush Creek	remnant historic habitat	outstanding National or State water		Shoal Creek	Headwaters	March	June 15th
29.8	Castile Creek	remnant historic habitat			Platte River	Route Y	March	June 15th
8.0	Crabapple Creek	remnant historic habitat	outstanding National or State water		Shoal Creek	Headwaters	March	June 15th
30.6	Crooked River, East Fork	sensitive species recov or maint	remnant historic habitat		Crooked River	Headwaters	May	July 15th
62.6	Crooked River	remnant historic habitat			Hwy 10	Headwaters	March	June 15th
13.0	Little Platte River	RTE or sensitive species spawning			Smithville Lake	Route H	March	June 15th
13.5	Log Creek	remnant historic habitat	outstanding National or State water		Shoal Creek	Headwaters	March	June 15th
72.1	Shoal Creek	sensitive species recov or maint	remnant historic habitat	outstanding National or State water	Routes D	Headwaters	May	July 15th

Several areas managed by the Department of Conservation are close to the proposed route, and two appear to be crossed by it: Jentell Breese Access and Pigeon Hill Conservation Area in Buchanan County. Management of these areas would be done from our St. Joseph Regional Office, (816) 271-3100. All areas within five miles are cited in PUBLIC_LAND&COAS.XLS.

One state park, Edward "Ted" and Pat Jones Confluence State Park, also appears to be crossed. The latter is managed by the Division of State Parks in the Missouri Department of Natural Resources (www.mostateparks.com/). We have records of public lands managed by USFWS, NPS and USACE, but no other state parks or lands managed by these agencies appear to fall within 1-mile of the line in CL_UTM15_MERGE_ENSR_012306_MO.SHP.

Conservation Opportunity Areas

MDC has identified a few areas in the state as the most promising places to restore or enhance species diversity or populations/habitats of concern. These are called Conservation Opportunity Areas and those crossed by or within one-mile of CL_UTM15_MERGE_ENSR_012306_MO are listed in the PUBLIC_LAND&COAS file on the diskette. Public/private partnerships

within these areas are being developed to improve the state's fish and wildlife diversity, and some federal funding may be available to help with habitat restoration projects within them.

Concerns & management recommendations based on site or project details, not related to specific heritage records:

The proposed pipeline runs through several regions with known karst geologic features (e.g. caves, springs, and sinkholes, all characterized by subterranean water movement). Such features are not routinely identified in heritage records but may be encountered by the project. Since cave fauna are influenced by changes to water quality, every effort should be made to protect groundwater in the project area. See <http://www.mdc.mo.gov/documents/nathis/endangered/karst.pdf> for best management information.

The proposed pipeline crosses state-designated "spawning streams," listed above. Fish spawn (lay and fertilize their eggs) at specific times of the year. Fish eggs are vulnerable to habitat destruction; heavy sediment loads; or high levels of chemical or organic pollutants. All activities that alter, destabilize, or destroy stream bottoms or banks should be avoided to prevent disrupting the spawning activities of stream fishes – for most species from March 15 to June 15. In addition, avoid all activities that introduce chemical or organic pollutants to streams.

The entire route is through areas where Indiana bats (*myotis sodalis*, Federally endangered, State endangered) are known to roost and raise young during summer months. They do so under the bark of trees in riparian forests and upland forests near perennial streams. During project activities, avoid degrading stream quality and where possible leave snags standing and preserve mature forest canopy. Additional information to incorporate in planning documents is available at <http://www.mdc.mo.gov/documents/nathis/endangered/indianabat.pdf>.

Gray bats (*myotis grisescens*, Federally endangered, State endangered) are likely to occur in the Missouri River plains in St. Charles County, as they forage over streams, rivers, and reservoirs. See <http://www.mdc.mo.gov/documents/nathis/endangered/graybat.pdf> for best management recommendations.

Habitat loss can impact populations of grassland birds native along the proposed pipeline, including barn owls (state endangered), northern harriers (state endangered), Henslow's sparrow (imperiled in the state), and greater prairie-chickens (state endangered). Revegetation with native grasses and other flowering plants will minimize the impact of habitat disturbance. Best management practices may be found on-line at <http://www.mdc.mo.gov/nathis/endangered/bmp.htm>.

The proposed line runs in the vicinity of "booming grounds", or courtship areas, for greater prairie chickens (*tymppanuchus cupido*, state endangered). This grassland bird may nest and forage in grasslands several miles away from the booming ground. Prairie chickens may use grasslands in the project area. See <http://www.mdc.mo.gov/documents/nathis/endangered/prairiechicken.pdf> for best management recommendations

Decurrent false aster (*boltonia decurrens*, Federally threatened, State endangered) may occur near the Missouri/Mississippi River confluence in moist soils subject to periodic flooding. This species may appear in previously undocumented locations as water-borne seeds are deposited during periods of high water. Ditch banks and flood-prone areas of agricultural fields can support populations of decurrent false aster when shading and competition from other species is minimal. See <http://www.mdc.mo.gov/documents/nathis/endangered/aster.pdf> for best management recommendations.

Overwintering bald eagles (*haliaeetus leucocephalus*, Federally threatened, State endangered) may occur along rivers and lakes, as they are common winter residents in big river habitats and major lakes where they feed on fish. See <http://www.mdc.mo.gov/documents/nathis/endangered/baldeagle.pdf> for best management recommendations.

Pallid sturgeons (*scaphirhynchus albus*, Federal and State endangered) are big river fish that may range widely in the Mississippi and Missouri River system (including parts of major tributaries). Because the preferred habitat and range of the species are unknown, any project that modifies big river habitat or impacts water quality should consider the possible impact to pallid sturgeon populations. See http://www.mdc.mo.gov/documents/nathis/endangered/p_sturgeon.pdf for best management recommendations.

The Missouri and Mississippi Rivers are home to a number of species of state and federal concern, including pallid sturgeon, gray bats, Indiana bats, bald eagles, lake sturgeon, flathead chubs and others. Terrestrial projects that manage construction and include operation plans to avoid runoff of sediment or pollutants are unlikely to affect these species. Projects that place fill in or discharge water to the river are subject to federal permits, and strict observance of conditions required in those permit is important to minimize risk of damage to endangered species.

Cross-country pipelines affect both plants and wildlife, as do activities necessary to their construction, maintenance and repair. The Conservation Department through its Private Land Services may be able to assist project planners in identifying problems, ways to minimize adverse impacts or opportunities to enhance habitat in the course of construction.

Revegetation is an important part of managing utility corridors, and it can have significant resource impacts – for better or worse. Revegetation of disturbed areas is recommended to minimize erosion, as is restoration with native plant species compatible with the local landscape and wildlife needs. Annual ryegrass may be combined with native perennials for quicker green-up. Avoid aggressive exotic perennials such as crown vetch and sericea lespedeza. Maintenance plans for ground cover in utility corridors can have significant implications for sensitive resources. Native plant species typically require low maintenance over the long term, and provide more benefits to native wildlife. Utility corridors can provide wildlife travel corridors, food sources and types of low-growing plant diversity sometimes rare in adjoining land. Mowing and maintenance schedules should consider nesting seasons, and diversity in plant composition.

A HERITAGE REVIEW provides information about species and habitats of concern that could be affected by the project. Heritage records note things that were positively identified at some date and time, marked at a location that may be more or less precise. Animals move quickly but plant communities can move also. To say "there is a record" does not mean the species/habitat is still there. To say that "there is no record" does not mean the project may not encounter something. Because of this, reports include information about records near but not necessarily on the project site. Three different kinds of information are provided.

- *FEDERAL Concerns are species/habitats protected under the Federal Endangered Species Act and that have been known near enough to the project site to warrant consideration. For these, project managers must contact the U.S. Fish and Wildlife Service Ecological Services (101 Park Deville Drive Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132; Fax 573-234-2181) for consultation.*
- *STATE Concerns are species/habitats known to exist near enough to the project site to warrant concern and protected under the Wildlife Code of Missouri (RSMo 3 CSR 10). "State Endangered Status" is determined by the Missouri Conservation Commission under constitutional authority, with requirements expressed in the Missouri Wildlife Code, rule 3CSR10-4.111. "State Rank" is numeric rank of relative rarity, protected under general provisions of the Wildlife Code but not endangered.*
- *"Concerns & management recommendations" are things for which one might prudently look. There is no specific heritage record, but our knowledge of the surrounding landscape suggests consideration. 93% of Missouri's land is in private ownership, so most sites have never been carefully inspected by conservation professionals*

This report is not a site clearance letter. Rather, it provides an indication of whether or not public lands and sensitive resources are known to be (or are likely to be) located close to the proposed project. Incorporating information from our Heritage Database into project plans is an important step that can help reduce unnecessary impacts to Missouri's sensitive natural resources. However, the Heritage Database is only one reference that should be used to evaluate potential adverse impacts. Other types of information, such as wetland and soils maps and on-site inspections or surveys, should be considered. Reviewing current landscape and habitat information and species biological characteristics would additionally ensure that species of conservation concern are appropriately identified and addressed.

Additional information on rare, endangered and watched species may be found at <http://www.mdc.mo.gov/nathis/endangered/>. If you would like printed copies of best management practices cited as internet URLs, please contact us.

CONFIDENTIAL

January 24, 2006

ENSR
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Fort Collins, CO 80525
tel 970.493.8878
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email
cjohnson@ensr.aecom.com
web www.transcanada.com

Doyle Brown
Policy Coordinator
Missouri Department of Conservation
P.O. Box 180
Jefferson City, MO 65102

Dear Mr. Brown:

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



Doyle Brown
January 24, 2006
Page 2

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.

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).

On behalf of TransCanada, ENSR would like to provide an opportunity for Missouri Department of Conservation (MDC) biologists and botanists to identify prominent terrestrial and aquatic resource issues or concerns that may occur within or adjacent to the project area, focusing on species that are either sensitive (e.g., state-listed), have high economic value (e.g., big game, waterfowl), or are considered important by the state (e.g., raptors, bats). Please forward this request to the applicable specialists (e.g., fisheries and/or wildlife biologists, habitat biologists, botanists, etc.) so they may provide information and input. Resource information provided by the MDC will be reflected in the environmental baseline description pertaining to the project. If applicable, please send electronic files for our environmental analysis to: cjohnson@ensr.aecom.com.

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.



Doyle Brown
January 24, 2006
Page 3

ENSR also is contacting the U.S. Fish and Wildlife Service and State Natural Heritage Program to request sensitive species information and to obtain input regarding the proposed Project route in Missouri. 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,

A handwritten signature in cursive script that reads "Charles Johnson".

Charles Johnson
Senior Wildlife Biologist

CJ/

Ref: 10623-004

Enc. Overview Project Map
CD

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

Shannon Cave
Policy Coordination- Natural Heritage Program
Missouri Dept. of Conservation
P.O. Box 180
Jefferson City, MO 65102

Dear Mr. Cave:

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.

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National Environmental Policy Act Process

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Shannon Cave
January 24, 2006
Page 2

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Information Request

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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 Missouri Department of Conservation to request sensitive species information and to obtain input regarding the proposed Project route in Missouri. 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

Enc. Overview Project Map
CD