

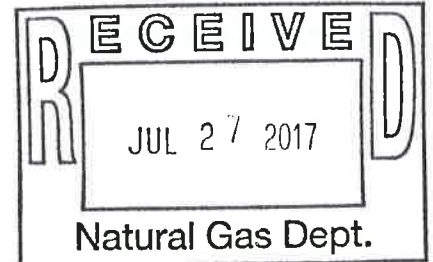
NEBRASKA

Good Life. Great Journey.

DEPARTMENT OF TRANSPORTATION

July 26, 2017

Tim Schram, Chair
Nebraska Public Service Commission
300 The Atrium
1200 N St.
Lincoln, NE 68508



Dear Mr. Schram:

On February 16, 2017, TransCanada Keystone, L.P. (TransCanada) filed an application with the Nebraska Public Service Commission (Commission) seeking approval of a proposed route for the Keystone XL Pipeline, pursuant to the Nebraska Major Oil Pipeline Siting Act. On May 23, 2017, the Commission requested the Nebraska Department of Transportation (NDOT) prepare a report, based on this agency's areas of expertise, and have it filed with the Commission no later than July 28, 2017.

Enclosed with this letter is the requested report relating to the impact of the pipeline on any area within this agency's jurisdiction for the Commission to use in its review of the application submitted by TransCanada.

Sincerely,

A handwritten signature in black ink, appearing to read "K. Schneweis".

Kyle Schneweis, P.E.
Director

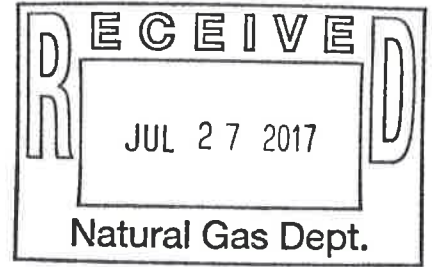
KS:MO:JNM:z

Enclosure

cc: Khalil Jaber, Deputy Director – Engineering, NDOT
Mike Owen, Roadway Design Engineer, NDOT
Brendon Schmidt, Right-of-Way Division Manager, NDOT
Tom Goodbarn, District 1 Engineer, NDOT
Kevin Domogalla, District 3 Engineer, NDOT
Wes Wahlgren, District 4 Engineer, NDOT
Mark Kovar, District 8 Engineer, NDOT
Jamie Mikkleson, Utilities Engineer, NDOT

Kyle Schneweis, P.E., Director
Department of Transportation
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PO Box 94759
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Keystone XL Pipeline Route Analysis

Nebraska Department of Transportation

July 26, 2017

NEBRASKA

Good Life. Great Journey.

DEPARTMENT OF TRANSPORTATION



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1.0 Introduction

On February 16, 2017, TransCanada Keystone, L.P. (TransCanada) filed an application with the Nebraska Public Service Commission (Commission) seeking approval of a proposed route for the Keystone XL Pipeline, pursuant to the Nebraska Major Oil Pipeline Siting Act. On May 23, 2017, the Commission requested that the Nebraska Department of Transportation (NDOT) prepare a report, based on this agency's areas of expertise, relating to the impact of the pipeline on any area within this agency's jurisdiction for the Commission to use in its review of the application submitted by TransCanada.

2.0 Identified Crossing Locations

NDOT has the duty to construct, operate, and maintain the highways within the state of Nebraska. TransCanada asserts that the Preferred Route for the TransCanada Keystone XL Pipeline will cross twenty-four (24) state and federal highways in four (4) NDOT geographic districts (see Appendix A and Appendix B). In addition to each highway crossing, NDOT has other properties, to include maintenance yards, which have the potential to be impacted by the proposed pipeline route.

The Keystone XL Preferred Route has been reviewed within each district that it crosses for impacts to the following entities:

- Projects in the State Transportation Improvement Program (STIP)
- Wetland mitigations banks
- Airports within 10 miles of the Preferred Route
- State maintenance yards within 5 miles of the Preferred Route

The STIP is a list of NDOT construction projects for the current fiscal year and a list of programmed projects in the next five (5) fiscal years.

2.1 District 1

Listed below are the State properties in District 1 as categorized in Section 2.0 of this report:

- The Preferred Route crosses six (6) highways in two (2) different counties as shown in Table 2-1.
- Two (2) projects were identified on the STIP; however, neither of them include any improvements that would require widening of the State right-of-way.
- The Fairbury Municipal Airport is located within ten (10) miles of the Preferred Route.
- No wetland mitigation banks or State Maintenance yards were located.

Table 2-1: District 1 Highway Crossings

| County | Highway | Approximate Reference Post Range |
|-------------------|---------|----------------------------------|
| District 1 | | |
| Jefferson | 8 | 62.0 – 67.0 |
| Jefferson | 136 | 156.0 – 161.0 |
| Jefferson | 15 | 19.0 – 23.0 |
| Jefferson | 4 | 129.0 – 134.0 |
| Saline | 74 | 90.0 – 95.0 |
| Saline | 41 | 36.0 – 40.0 |

2.2 District 4

Listed below are the State properties in District 4 as categorized in Section 2.0 of this report:

- The Preferred Route crosses six (6) highways, one (1) expressway and one (1) Interstate in five (5) different counties as shown in Table 2-2.
- Three (3) projects were identified on the STIP; however, none of them include any improvements that would require widening of the State right-of-way.
- The Fairmont State Airfield, York Municipal Airport, and Genoa Municipal Airport are located within ten (10) miles of the Preferred Route.
- The York rest area along I-80 is located approximately 0.5 miles from the Preferred Route.
- The Fullerton State Maintenance Yard and York State Maintenance Yard are located within five (5) miles of the Preferred Route.
- No wetland mitigation banks were located.

Table 2-2: District 4 Highway Crossings

| County | Highway | Approximate Reference Post Range |
|-------------------|---------|----------------------------------|
| District 4 | | |
| Fillmore | 6 | 259.0 – 264.0 |
| York | 81 | 54.0 – 58.0 |
| York | 80 | 348.0 – 353.0 |
| York | 34 | 265.0 – 270.0 |
| Polk | 66 | 11.0 – 16.0 |
| Polk | 92 | 386.0 – 390.0 |
| Merrick | 30 | 350.0 – 355.0 |
| Nance | 22 | 60.0 – 65.0 |

2.3 District 3

Listed below are the State properties in District 3 as categorized in Section 2.0 of this report:

- The Preferred Route crosses seven (7) highways in two (2) different counties as shown in Table 2-3.
- The Albion Municipal Airport and Antelope County Airport are located within ten (10) miles of the Preferred Route.
- The Albion State Maintenance Yard and Neligh State Maintenance Yard are located within five (5) miles of the Preferred Route.
- No projects were identified on the STIP and no wetland mitigation banks were located.

Table 2-3: District 3 Highway Crossings

| County | Highway | Approximate Reference Post Range |
|-------------------|---------|----------------------------------|
| District 3 | | |
| Boone | 56 | 31.0 – 36.0 |
| Boone | 39 | 33.0 – 38.0 |
| Boone | 91 | 127.0 – 132.0 |
| Boone | 32 | 6.0 – 11.0 |
| Antelope | 275 | 46.0 – 51.0 |
| Antelope | 14 | 161.0 – 166.0 |
| Antelope | 20 | 332.0 – 337.0 |

2.4 District 8

Listed below are the State properties in District 8 as categorized in Section 2.0 of this report:

- The Preferred Route crosses three (3) highways in two (2) different counties as shown in Table 2-4.
- One (1) project was identified on the STIP; however, it did not include any improvements that would require widening of the State right-of-way.
- The O’Neill Municipal – John L. Baker Airport and Stuart-Atkinson Municipal Airport are located within ten (10) miles of the Preferred Route.
- No wetland mitigation banks or State Maintenance yards were located.

Table 2-4: District 8 Highway Crossings

| County | Highway | Approximate Reference Post Range |
|-------------------|---------|----------------------------------|
| District 8 | | |
| Holt | 281 | 188.0 – 195.0 |
| Holt | 11 | 159.0 – 165.0 |
| Keya Paha | 12 | 81.0 – 85.0 |

3.0 Permits

TransCanada will be required to obtain a permit from NDOT for each crossing, use or occupancy of NDOT property, including but not limited to typical highway crossings, parallel occupancies, access drives or other uses, in order to construct and operate pipeline facilities across or along highway property (Reference 3.1 and Reference 3.2).

NDOT will work with TransCanada to establish a consistent permit review process across all NDOT Districts to facilitate the application process and establish a set protocol to protect the State’s transportation infrastructure to the fullest extent possible and to ensure that, upon completion of the pipeline, the roadside will be restored to its original condition.

Prior to reviewing any permit requests, TransCanada and NDOT will enter into an agreement outlining all the requirements set forth in this report and any others that are deemed necessary. Once the agreement has been executed by both parties, NDOT will evaluate each permit in detail to determine the impact of the construction, operation, and maintenance of the pipeline across or along highway property.

3.1 Permitting Process

Permit application(s) shall be submitted to the respective District Permit Office in the area of the intended work in the same manner as any other permit. Each permit will then be routed for review, processing, and approval. Once the application has been satisfactorily reviewed, the permit detailing any special instructions or requirements, will be issued (Reference 3.2).

Each highway crossing will be required to be on an individual permit. Any temporary drives associated with the individual crossing can be included on the same permit application. Any permanent access driveways will be required to be on an individual permit separate from the crossing permit.

3.2 Performance Bonds

TransCanada will be required to meet all of NDOT's standard permit conditions including paying for performance bonds to secure proper completion of the work for each permitted location.

The performance bonds are outlined as follows:

- \$5,000 per driveway per side
- \$10,000 per highway crossing
- \$25,000 per interstate or 4-lane crossing

The performance bond for each permit will need to reflect the appropriate amount to include each element of the permit. For instance, if any temporary drives are included on a permit with the highway crossing then the performance bond will need to be the amount required for a highway crossing and the appropriate number of driveways on the permit. The NDOT permit application will indicate that it is at the discretion of the District Engineer as to when the bond can be released based on site-specific conditions.

3.3 Access Requirements

Each driveway access location, permanent or temporary, will be individually considered for site-specific conditions such as sight distance, proximity to existing access drives, and drainage. Access drives may not be allowed immediately adjacent to the proposed crossing location if site-specific conditions are not acceptable to NDOT. Temporary drives will not be permitted off Interstate highways, Freeways, or Expressways. Existing drive locations on the Expressway system may be used by the permittee with NDOT approval.

NDOT approved materials must be used in the construction of all approved driveways. Each District Engineer has the ability to require materials that are appropriate for the location of the driveway.

Temporary drive locations must be returned to their existing condition upon the completion of construction. This includes any required grading, compaction and seeding following construction.

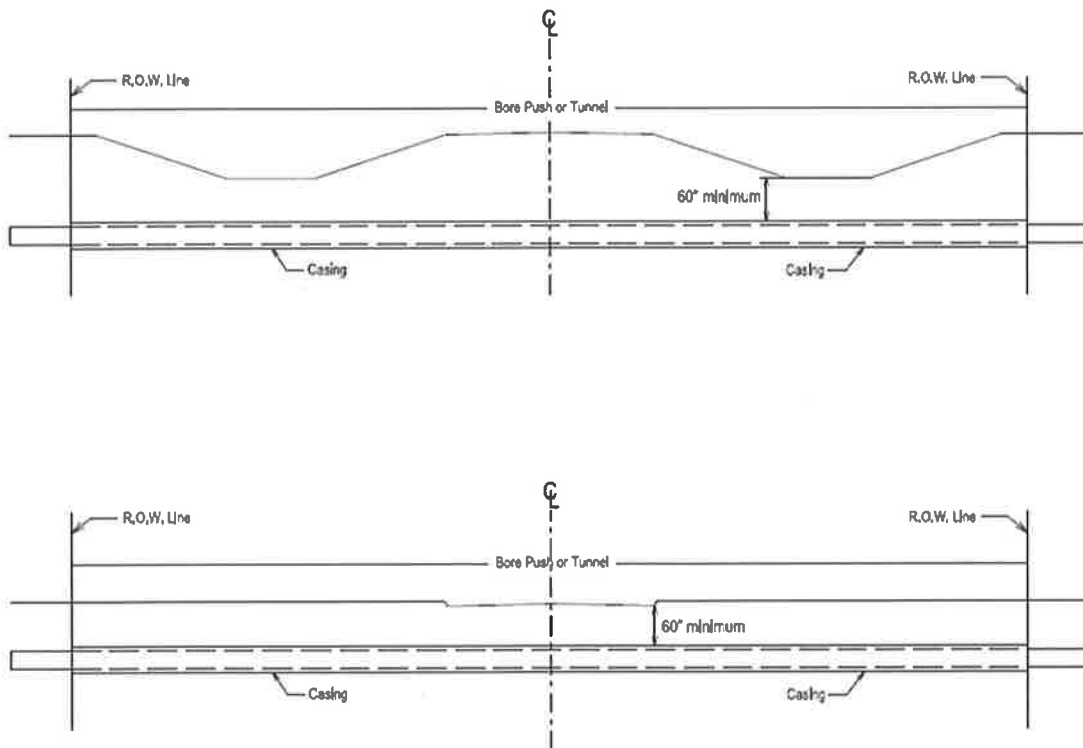
4.0 Construction and Maintenance

Outlined below are considerations that TransCanada shall follow prior to, during, and after construction of the pipeline and any access drives.

- TransCanada shall provide a current set of detailed plans and specifications for each highway use or crossing well in advance of construction and should make reasonable revisions to those plans as required by NDOT.
- NDOT will have the right to inspect all crossing installations and have staff on-site during construction.
- Any area disturbed by the construction, operation, or maintenance of the pipeline must be returned to its original condition by required compacting, grading, and seeding on highway property according to NDOT specifications.
- Traffic control during construction and maintenance will be the responsibility of TransCanada and must conform to NDOT requirements and the Manual on Uniform Traffic Control Devices (MUTCD) (Reference 4.1). NDOT will provide an approved traffic control plan as an attachment to the approved permit.
- TransCanada will be responsible for protecting, repairing, or relocating any drainage facilities and other utilities including power, data utility facilities located within the existing right-of-way.

NDOT policy and prior decisions require that the pipeline will be encased and buried at least 60" below the surface of the ground and will be directionally bored beneath the highway surface, with no bore pits permitted on highway right-of-way (see Figure 4-1).

Figure 4-1: NDOT Typical Cross Section for Pipeline Crossing



4.1 Insurance Requirements

TransCanada will be required to obtain insurance protecting the public and NDOT in specified amounts for its pipeline construction contractor (s). The types and amounts of insurance required is the same that is required by all contractors performing work on NDOT projects and are listed below.

- Commercial General Liability (CGL)
 - A limit of at least \$1,000,000 per occurrence with a general aggregate of at least \$2,000,000 for bodily injury (including death) and/or damage to property, including explosion, collapse and underground property damage hazards.
 - Coverage shall be provided by a standard form Commercial General Liability Policy covering bodily injury, property damage including loss of use, and personal injury.
 - The State of Nebraska, Department of Transportation, must be named as Additional Insured on a primary and non-contributory basis including completed operations (the completed work/product) for three (3) years after the work/product is complete.
 - TransCanada agrees to waive its rights of recovery against the State of Nebraska, Department of Transportation. Waiver of subrogation in favor of the State of Nebraska, Department of Transportation must be added to, or included in, the policy.
- Umbrella Policy
 - An umbrella policy with a limit of at least \$1,000,000 per occurrence and a general aggregate of at least \$2,000,000 (or, alternatively, TransCanada may increase its CGL policy coverage by such amounts).
- Automobile Liability
 - Limits of at least \$1,000,000 per accident.
 - Coverage shall apply to all Owned, Hired, and Non-Owned Autos on or about State Property.
 - TransCanada agrees to waive its rights of recovery against the State of Nebraska, Department of Transportation. Waiver of subrogation in favor of the State of Nebraska, Department of Transportation must be added to, or included in, the policy.
- Workers' Compensation
 - Limits: Statutory coverage for the state of Nebraska.
- Employer's Liability
 - Limits of \$100,000 for each accident, \$100,000 Deceased – per person, \$500,000 Deceased – Policy Limit
 - TransCanada agrees to waive its rights of recovery against the State of Nebraska, Department of Transportation. Waiver of subrogation in favor of the State of Nebraska, Department of Transportation must be added to, or included in, the policy.
- Other Insurance
 - Whenever TransCanada hires a contractor or subcontractor at any tier to perform construction, reconstruction, installation, operation, maintenance, repair, or other work on State property, then prior to the start of such work, such contractor and subcontractors shall be required to meet the insurance requirements set out above in Section 5.1 of this report.

Additional information regarding NDOT's insurance requirements can be found in Reference 4.2.

4.2 One-Call Notification Act

The permit applicant shall contact NDOT Highway Area Superintendent or the appropriate individual as indicated on the permit two (2) business days in advance of any work and discuss any State owned buried facilities. In accordance with the One-Call Notification Act, any other underground facilities shall be located by calling the One-Call Notification Center or filing an online ticket through the Nebraska One-Call website (Reference 4.3).

The One-Call Notification Act references Nebraska Statute 76-2301 to 76-2331. This law sets the requirements to be followed by any 'person' contemplating 'excavation' and what is required to protect 'underground facilities'.

Excavators must notify operators of underground facilities in an excavation area so that facility owners have the opportunity to identify and locate the underground facilities prior to excavation and so that the excavators may then observe proper precautions to safeguard the underground facilities from damage.

The law defines the key phrases thus:

Excavation: Shall mean any activity in which earth, rock or other material in or on the ground is moved or otherwise displaced by means of tools, equipment, or explosives and shall include grading, trenching, digging, ditching, drilling, auguring, tunneling, scraping, and cable or pipe plowing or driving.

Person: Shall mean an individual, partnership, limited liability company, associations, municipality, state, county, political subdivision, utility, joint venture, or corporation and shall include the employer of the individual.

Underground facility: Shall mean any item of personal property buried or placed below ground for use in connection with the storage or conveyance of water, sewage, electronic communications, telephonic communications, cable television, electric energy, oil, gas, hazardous liquids, or other substances including pipes, trunk lines, fiber optic cables, sewers, conduits, cables, valves, lines, wires, manholes, and attachments to such personal property.

4.3 Environmental Consideration

TransCanada will be responsible for meeting local, state and federal requirements regarding permitting and protection of the State's economic, cultural, environmental, historical and archaeological resources.

4.4 Airport Coordination

TransCanada is responsible for coordinating construction activities with each individual airport along the Preferred Route. The height of any equipment used in the construction of the pipeline shall not exceed the local airport's Height Restriction Zoning. A copy of the airport zoning should be on file at each individual airport. The contractor is also required to submit a 7460-1 Form with the FAA for all permanent or temporary structures over 200' tall, or that break a 100:1 slope from a public-use airport. This includes any trucks or equipment, including anything attached to the equipment, used during the project.

The contractor may use the Notice Criteria Tool (Reference 4.4) provided by the Federal Aviation Administration (FAA) to assist with checking equipment height for potential airspace violations.

4.5 Casing Requirements

After reviewing some of the design elements of the Keystone XL pipeline, including anticipated flow rate, pressure, and carrier pipe characteristics, NDOT has specified a casing requirement that NDOT believes will provide the best protection in the event of pipeline failure and/or leakage. All highway crossings (regardless of functional classification) will be encased from right-of-way to right-of-way. Casing will not be waived for any location (see Appendix C).

The minimum diameter casing shall be at least two (2) nominal pipe sizes larger than the nominal size of the facility being encased. For example if the proposed pipeline is 36 inches; therefore, NDOT recommends a pipe casing of 42 inches. This is in accordance with the NDOT utility policy (Reference 3.1).

The proposed pipeline will be a high pressure pipeline and since this high pressure will rupture through plastic and concrete, steel casing must be used. The casing should be the same material and at least as thickness as the pipeline itself and shall follow API specifications.

5.0 Future Commitments

NDOT has identified some future commitments below, which have been previously communicated with TransCanada and the Commission.

- TransCanada will be required to properly maintain and repair the pipeline in the future and to obtain any necessary future permits for repair, reconstruction, or maintenance of TransCanada facilities located on highway property.
- TransCanada will be responsible for all cleanup costs related to any pipeline failure or leakage on or near highway property.
- TransCanada will be required to indemnify, defend and hold the State harmless from any damage of any nature to any person or property which may result from TransCanada's operations on or near highway property.
- TransCanada will be held fully responsible for any damage to, or defacing of highway property that may be caused by its operations, and will be required to restore the highway to its original condition in a timely manner with minimal disruption of the facilities function.
- Should the future construction, reconstruction or maintenance of a highway necessitate the moving or relocation of TransCanada facilities located on highway property, TransCanada shall move or relocate the facilities at TransCanada's own expense and as directed by NDOT.

6.0 Conclusion

NDOT has the duty to construct, operate, and maintain the highways within the state of Nebraska. TransCanada asserts that the Preferred Route for the TransCanada Keystone XL Pipeline will cross twenty-four (24) state and federal highways in four (4) NDOT geographic districts. In addition to each highway crossing, NDOT has other properties, to include maintenance yards, which have the potential to be impacted by the proposed pipeline route.

The application submitted by TransCanada also mentions that there may be portions of the pipeline's Preferred Route co-located with roads in addition to temporary construction access roads and permanent access drives. However, specific locations or the entities with jurisdiction at these locations

are not identified in the application. Although the information in the application and GIS Data provided the general location of the Preferred Route and typical width of construction corridors, the permanent easements are not shown.

Once the precise Keystone XL Pipeline crossing locations are identified, NDOT will determine the full extent of the impact of the Preferred Route on any area within NDOT's jurisdiction.

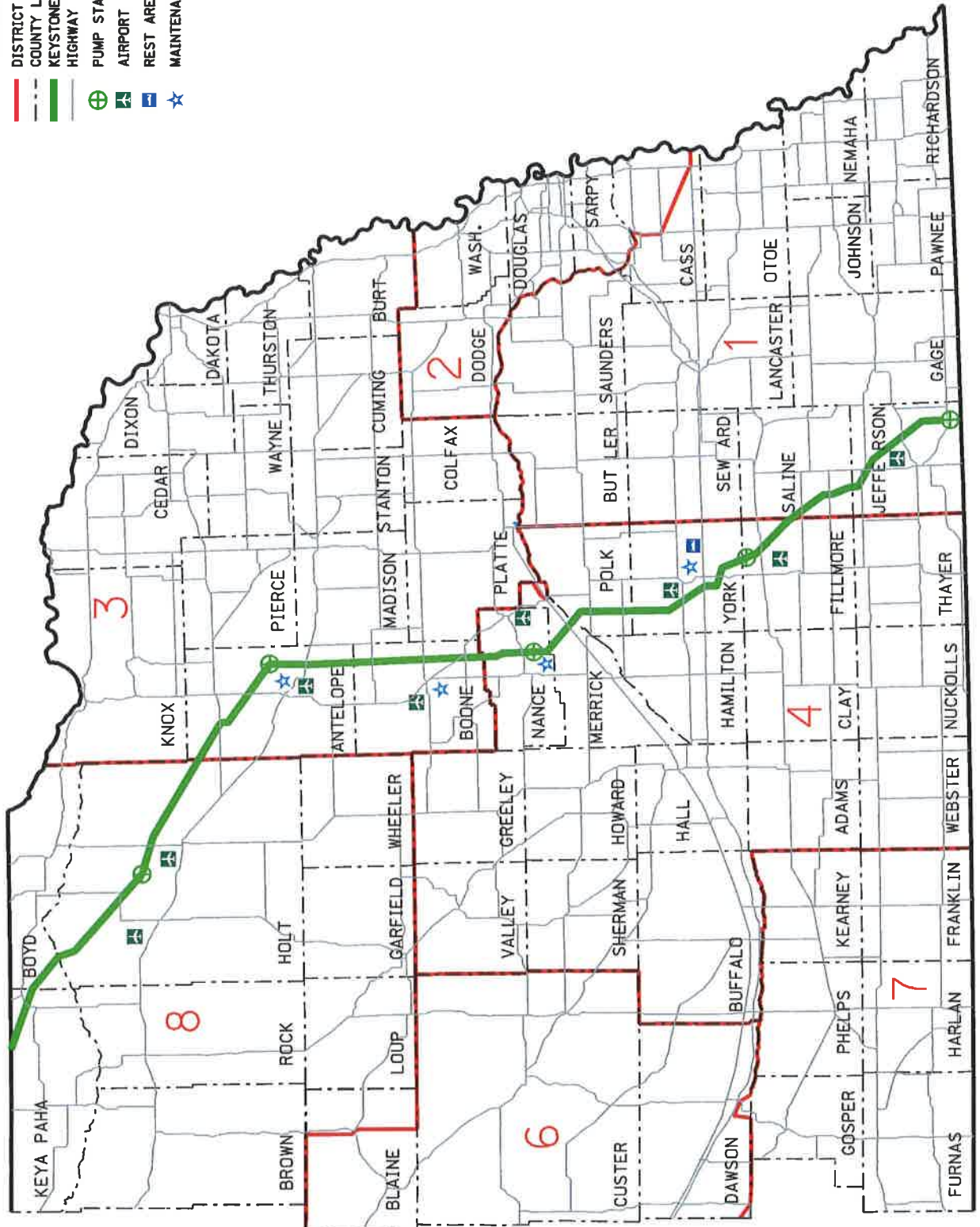
7.0 References

- 3.1 *Policy for Accommodating Utilities on State Highway Right-of-Way*. Nebraska Department of Transportation, 2001. (<http://dot.nebraska.gov/media/6872/utilaccom.pdf>)
- 3.2 "Right-of-Way Permits." *Nebraska Department of Transportation*. (<http://dot.nebraska.gov/business-center/permits/row/>)
- 4.1 U.S. Department of Transportation, Federal Highway Administration, Manual on Uniform Traffic Control Devices, Current Edition. (https://mutcd.fhwa.dot.gov/pdfs/2009/pdf_index.htm)
- 4.2 "Vendor Insurance." *Nebraska Department of Transportation*. (<http://dot.nebraska.gov/business-center/contractor/insurance/>)
- 4.3 *Nebraska811*. (<https://www.ne1call.com/>)
- 4.4 "Obstruction Evaluation / Airport Airspace Analysis (OE/AAA)." *Federal Aviation Administration*. (<https://oeaaa.faa.gov/oeaaa/external/portal.jsp>)

Appendix A – Keystone Pipeline System in Eastern Nebraska

KEYSTONE PIPELINE SYSTEM IN EASTERN NEBRASKA

- LEGEND**
- DISTRICT LINE
 - COUNTY LINE
 - KEYSTONE XL PIPELINE
 - HIGHWAY
 - PUMP STATION
 - AIRPORT
 - REST AREA
 - MAINTENANCE YARD

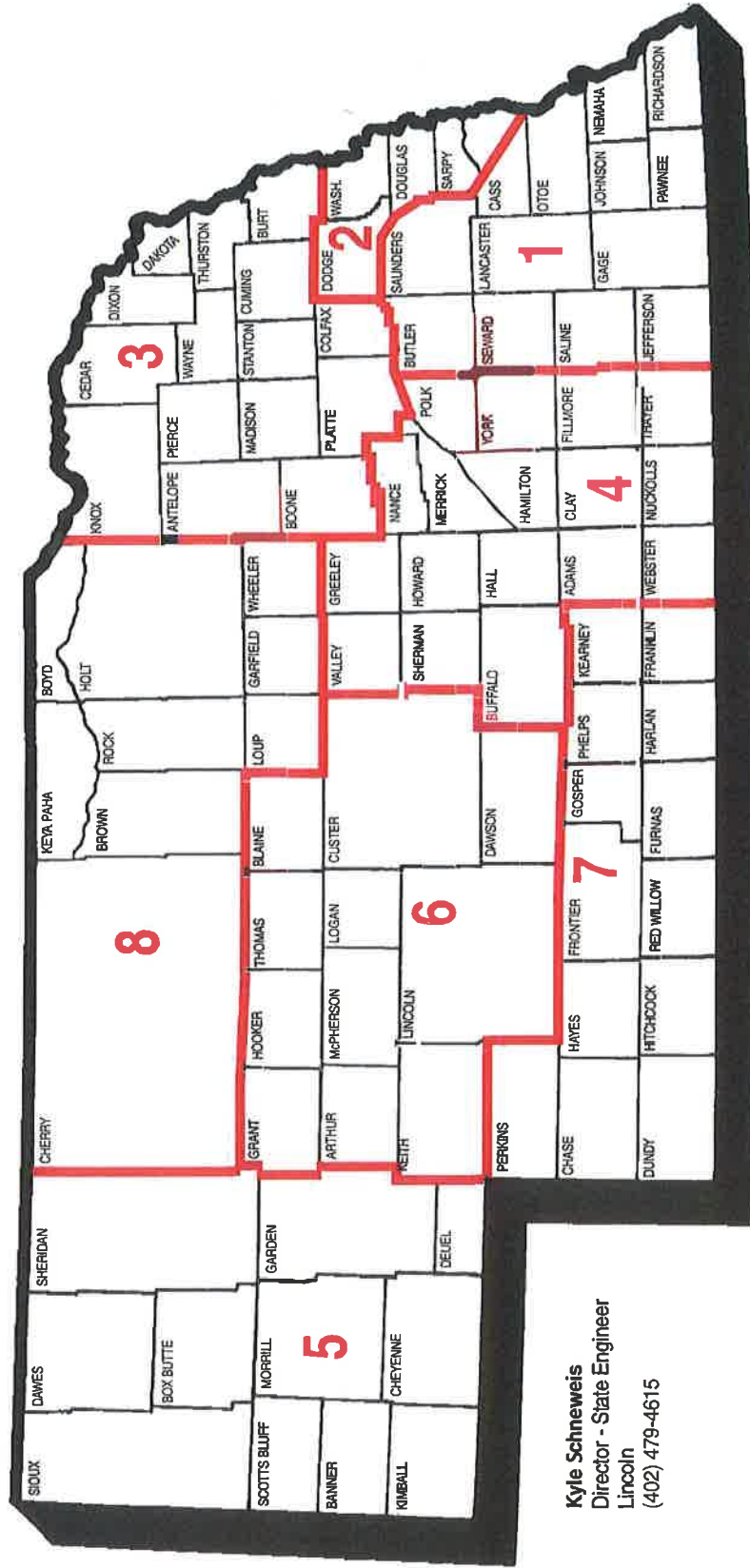


Appendix B – NDOT District Map

Nebraska ♦ Department ♦ of ♦ Transportation

District Engineers

| | | | | | | | |
|---|--|---|--|--|--|---|--|
| Thomas Goodbarn District 1 Lincoln (402) 471-0850 | Timothy W. Weander District 2 Omaha (402) 595-2534 | Kevin Domogalla District 3 Norfolk (402) 370-3470 | Wesley Wahlgren District 4 Grand Island (308) 385-6265 | Doug Hoevet District 5 Gering (308) 436-6587 | Gary Thayer District 6 North Platte (308) 535-8031 | Kurt Vosburg District 7 McCook (308) 345-8490 | Mark Kovar District 8 Ainsworth (402) 387-2471 |
|---|--|---|--|--|--|---|--|



Kyle Schneeweis
Director - State Engineer
Lincoln
(402) 479-4615

**Appendix C – Letter from NDOT,
November 7, 2013 and Letter from
TransCanada, September 30, 2013**

November 7, 2013

Mr. Les Cherwenuk
Director, Keystone Pipeline Project
TransCanada Keystone XL Pipeline
1106 West Benjamin, Suite 600
Norfolk, NE 68701

Dear Mr. Cherwenuk:

Earlier this year, several members of key functional areas of the Nebraska Department of Roads (NDOR) met to discuss the upcoming permitting process for the Keystone XL pipeline. This project will affect multiple areas of the state. Due to the permitting process, this group felt it was important to identify a uniform protocol to ensure that no matter the location, the same guidelines would apply.

During this meeting, several issues were discussed, including the casing requirement. It was anticipated that this could be an area of concern for Keystone. While the NDOR does not dispute the safety standards to which Keystone holds their pipeline design to nor the technological advancements that are in place, it is of the utmost importance to the NDOR that we maintain the integrity of our transportation assets. It is also our desire to provide for not only a safe transportation system, but also one that is minimally disrupted by others who occupy our rights-of-way, both now and in the future.

The approved *Policy for Accommodating Utilities on State Highway Right-of-Way* ("Policy") directs that all pipelines carrying petroleum and other products be cased unless waived by the NDOR. One of the elements outlined in the Policy as a condition for waiving the casing requirement is **cathodic protection**, a design feature that Keystone has incorporated into their design. The Policy further describes the casing limits as toe of fill slope to toe of fill slope (*Part II, Construction of Pipelines, Section V(3b)*), but that it may also be required across the entire width of the right-of-way (*Part II, Construction of Pipelines, Section V(3e)*). All members agreed that casing would be required across the full width of the State right-of-way.

After reviewing some of the design elements of the Keystone pipeline, including anticipated flow rate, pressure and carrier pipe characteristics, our materials experts specified a casing requirement that NDOR believes would provide the best protection in the event of pipeline failure and/or leakage. Accordingly, the NDOR has specified the pipeline casing requirement as previously communicated and described in your correspondence, NPS 42 5LX-70 ksi steel with 0.75" wall thickness. This is the same wall thickness as the carrier pipe. Should rupture occur, the lateral pressure exerted upon the casing would be significant. Furthermore, the design life of the pipe material is generally shorter than the life of our pavements, thereby making casing necessary. These items were discussed with Ms. Kothari during our phone conversation on Thursday, May 30, 2013. At this time, Ms. Kothari indicated that she would provide reference material (received in early October, 2013) for NDOR's review for possibly reconsidering these requirements.

Mr. Les Cherwenuk
November 7, 2013
Page 2

The NDOR appreciates your further communication and assurances of high standards of performance for the Keystone XL pipeline. At this time, however, the NDOR has decided that a waiver for the encasement of all highway crossings across the entire right-of-way width, along with the specified material requirements, will not be approved.

Sincerely,

Signed By:

Randall D. Peters, P.E.
Director-State Engineer

RDP:MO:PTR1-NS

cc: Khalil Jaber, Deputy Director – Engineering, NDOR
Mike Owen, Planning & Project Development Engineer, NDOR
Mick Syslo, Materials & Research Engineer, NDOR
Bob Frickel, Right-of-Way Division Manager, NDOR
Todd Wicken, Highway Property Management Supervisor, NDOR
District Engineers, NDOR

bc: Andy Cunningham



Randall D. Peters, PE
Director State Engineer
Nebraska Department of Roads
P.O. Box 94759
Lincoln, NE 68509-4759

September 30, 2013

Dear Mr. Peters,

As you are aware, TransCanada Keystone Pipeline, LP ("Keystone") is currently planning the construction of the Keystone XL Pipeline along a route that crosses through portions of Nebraska. The purpose of this letter is to summarize conversations Keystone has had with the Nebraska Department of ("NDOR") regarding the casing of certain roads and highways to be crossed by the project and to inform NDOR of certain conditions Keystone is being requested to abide by that Keystone does not believe represents best industry practice. We are also herewith making a formal request to adopt standards that Keystone believes will better reflect current industry standards and better maintain the integrity of the Keystone XL pipeline.

The primary issue that has been discussed is the NDOR requirement to case all highway crossings. Keystone is being designed to be one of the safest, most technically advanced pipelines constructed as compared to other domestic onshore transmission liquid pipelines. Keystone is being designed to meet or exceed all federal regulatory requirements outlined in 49 CFR 195 (Transportation of Hazardous Liquids by Pipeline) as well as industry standards inclusive of ASME B31.4 and API 1102. In addition TransCanada has been working to incorporate 57 additional design, construction and operational conditions developed by the Pipeline Hazardous Materials and Safety Administration (PHMSA) and incorporated by the Department of State in its evaluation of the Presidential Permit for the Project. Current pipeline codes and industry standards and best practice do not call for cased crossings due to an increased risk for external corrosion on the pipeline resulting from electrolytic or mechanical shorts which could become present between the casing pipe and carrier pipeline. Additionally, the KXL pipeline will be cathodically protected. Keystone requests a waiver from the requirements to case crossings, as allowed by NDOR policy.

A second issue with the NDOR casing requirements is the casing material specification. For the locations where Keystone has agreed to provide casings or in the event NDOR refuses to grant a waiver of the casing requirement, it is Keystone's position that the NDOR standard of NPS 42 5LX-70 KSI steel with 0.75" wall thickness is significantly overdesigned for a non-pressurized casing. Keystone proposes to use its design standard of NPS 42 API 5L Grade B 0.562" wall thickness casing. The API 5L Grade B material was used previously in Nebraska for the crossing of I-80 during the original Keystone project.

Again, it is not considered best practice to install casings for road crossings due to increased corrosion risk and Keystone requests a waiver from the NDOR casing requirement as stated above. But in the alternative, the Keystone standard casing design should be permitted in the event NDOR continues to require casings.

We appreciate your continued assistance and request that you contact Keystone Engineering Manager Meera Kothari (tel: 713-693-6405) for further discussion of this matter.

Sincerely,



Les Cherwenuk
Director, Keystone Pipeline Project

Encl. (3)

Cc Brandie Neeman, Utility Engineer, Nebraska Department of Roads
Mike Owen, Planning and Development Division Manager, Nebraska Department of Roads
Khalil Jaber, Deputy Director of Engineering, Nebraska Department of Roads