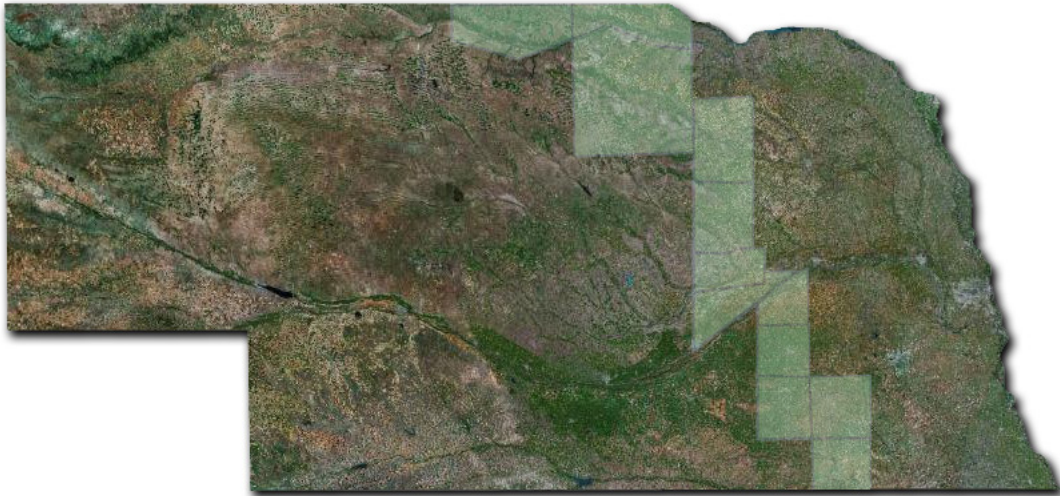


# The Economic Impact of the Keystone XL Pipeline on the State of Nebraska



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## The Economic Impact of the Keystone XL Pipeline on the State of Nebraska

### Preface

In spring of 2012, Goss & Associates responded to a request for proposals from the Consumer Energy Alliance (CEA) to estimate the impact of the Keystone XL pipeline on the State of Nebraska. After production and submission of a detailed proposal, Goss and Associates was selected by CEA to complete the study. The goal of this study is to estimate the impact of the development of the Keystone XL pipeline on the Nebraska economy.

Using input-output multipliers, the study provides sales, earnings and job impacts in addition to estimating the impact of the development on yearly state and local tax collections. This study, while funded by CEA, was developed independently of this organization. Any conclusions, findings, errors or mis-statements contained in this study are solely the responsibility of Goss & Associates, Economic Solutions.

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<sup>1</sup>This study was completed independent of Creighton University. As such, Creighton University bears no responsibility for findings or statements by Ernie Goss, or Goss & Associates, Economic Solutions.

**The Economic Impact of the Keystone XL Pipeline  
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| Definition of Terms      |   |
|--------------------------|---|
| Term                     | Definition  |
| Discounted               | Unless stated otherwise, all financial data in this report are stated in 2012 dollars.  |
| Direct effects           | The set of expenditures applied to the predictive model for impact analysis.  |
| IMPLAN                   | Using classic input-output analysis in combination with regional specific Social Accounting Matrices and Multiplier Models, IMPLAN provides a highly accurate and adaptable model for its users. The IMPLAN database contains county, state, zip code, and federal economic statistics which are specialized by region and can be used to measure the effect on a regional or local economy of a given change or event in the economy's activity. See Appendix C. |
| Input-output analysis    | A type of applied economic analysis that tracks the interdependence among various producing and consuming sectors of an economy. More particularly, it measures the relationship between a given set of demands for final goods and services and the inputs required to satisfy those demands (U.S. Bureau of Economic Analysis).   |
| Jobs supported           | A job in IMPLAN = the annual average of monthly jobs in that industry. Thus, 1 job lasting 12 months = 2 jobs lasting 6 months or = 3 jobs lasting 4 months each. A job can be either full-time or part-time.   |
| Labor income             | Wages & salaries plus self-employment income.   |
| Overall or sales impacts | Amount of additional sales, including insurance premiums, retail sales, wholesale expenditures, construction sales, etc. It is analogous to gross domestic product (GDP) but will include some double counting and will thus exceed GDP.  |
| Payroll                  | All forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation allowances, sick-leave pay, and employee contributions to qualified pension plans paid during the year to all employees.  |
| Private workers          | All those working excluding government workers, state, local and federal.   |
| Productivity             | Growth in Gross Domestic Product (GDP) per worker.  |
| Self-employment income   | Income of proprietors of non-incorporated companies including attorneys, accountants and consultants.   |
| Wages and salaries       | The total payroll cost of the employee paid by the employer. This includes wage and salary, all benefits (e.g., health, retirement, etc) and employer paid payroll taxes (e.g. employer side of social security, unemployment taxes, etc).  |



## Executive Summary

### Construction Period

**Between 2013 and 2014,<sup>2</sup> the Keystone XL pipeline construction will have a significant positive impact on the Nebraska economy. In 2012 dollars the impact of the direct or first round spending will be:<sup>3</sup>**

- Direct TransCanada construction spending in Nebraska of \$580.2 million including:
  - more than \$328.2 million in Nebraska spending by non-Nebraska workers.
  - \$104.8 million in direct labor spending by Keystone XL.<sup>4</sup>
  - \$75.0 million in spending for land easements, land purchases and crop losses due to construction.
  - almost \$72.2 million in pipeline services payments.
  - between 2013 and 2014, the Keystone XL pipeline construction will create total economic impacts (first round plus spillover).
- A contribution of \$817.4 million to the overall economic activity of Nebraska.
- Support an average of 5,517 jobs per year (includes both direct and indirect).
- Approximately \$375.6 million in labor income.

### Operation period, 2015-29

**During the first 15 years of operation, 2015 to 2029, the impact of the Keystone XL pipeline will include:**

- TransCanada direct spending in Nebraska of more than \$570.5 million.
- The addition of 19.5 direct Keystone XL jobs per year.
- An average of 302 new direct and indirect jobs per year.
- An additional \$1.0 billion added to the overall economic activity of Nebraska.
- More than \$580.3 million in direct plus indirect labor income.
- A \$679.3 million boost in Nebraska's GDP.

The Keystone XL pipeline will increase overall economic activity in Nebraska by \$817.4 million for 2013 and 2014 combined.

<sup>2</sup> TransCanada began pre-construction activity in 2009.

<sup>3</sup> Through this study, all financial values are expressed in 2012 dollars.

<sup>4</sup> Labor income includes self-employment income in addition to wages and salaries.

## Total Impacts (Construction and Operations)

**Between 2013 and 2029, construction and operations of the Keystone XL pipeline will contribute the following to the state of Nebraska:**

- An increase in the overall economic activity in Nebraska by approximately \$1.8 billion.
- An average of 916 new direct and indirect jobs per year.
- Additional direct and indirect labor income of almost \$956.0 million.

## State and Local Tax Impacts, 2013-29

**Between 2013 and 2029 construction and operations of the Keystone XL pipeline will contribute the following to state and local Nebraska taxes:**

- \$58.6 million in property taxes.
- \$39.1 million in sales taxes.
- \$20.1 million in individual income taxes.
- \$3.3 in corporate income taxes.
- \$13.5 million in other taxes.

Between 2013 and 2029 construction and operations of the Keystone XL pipeline will contribute \$58.6 million in property taxes.

## Other Estimated Impacts of the Keystone XL Pipeline

**Between 2013 and 2029 construction and operations of the Keystone XL pipeline will contribute the following to state and local Nebraska taxes:**

- Yearly, each \$1.0 million of Keystone XL pipeline *construction* spending creates another \$0.41 million of spillover impacts for a total Nebraska impact of \$1.41 million.<sup>5</sup>
- Yearly, each \$1 million of yearly Keystone XL pipeline *operations* spending creates \$0.80 million of spillover impacts for a total Nebraska impact of \$1.80 million.
- Yearly, each \$1 million of Keystone XL pipeline *construction* spending creates \$645,703 thousand in wages, salaries and self-employment income for Nebraska.
- Yearly, each \$1 million of Keystone XL pipeline *operations* spending creates \$1.0 million in wages, salaries and self-employment income for Nebraska.
- During the construction phase, Keystone XL pipeline spending will support a yearly average of 5,195 jobs for Nebraskans. This pay includes self-employment income.

<sup>5</sup> This number could potentially grow in years ahead as TransCanada purchases a portion of its pipeline, pump stations and terminals in Nebraska. In this study, it is assumed that 50 percent of these products are purchased outside the U.S. and 50 percent purchased inside the U.S. but outside of Nebraska.

# Chapter 1: Overview: The Keystone XL Pipeline in Nebraska

## Chapter Highlights:

TransCanada's Keystone XL project is a proposed extension of the existing Keystone Pipeline System. It would consist of an 1,179-mile crude oil pipeline and related facilities that would be used largely to connect Canada's tar-sands oil – or bitumen – from a supply hub in Hardisty, Alberta to Steele City, Nebraska for eventual transport to refineries on the Gulf of Mexico in Texas.<sup>6</sup> The pipeline could transport up to 830,000 barrels per day and is estimated to cost \$5.3 billion.<sup>7</sup> After its application was rejected by the United States State Department in January 2012 due to concerns regarding the route via the Sand Hills region of Nebraska which includes the Ogallala Aquifer and large areas of wetland ecosystems, TransCanada proposed a new application with a different route that avoids the areas of concern and is awaiting approval. If permitted, Keystone XL could begin operation in 2015.<sup>8</sup>

Keystone XL has generated much debate surrounding issues of pipeline safety, effect on gasoline prices, energy independence (from unstable regions of the world), environment and ecology, and economic impact. The economic impact is the focus of this study with the goal being to gauge the impact that the construction and operations of Keystone XL would have on the state and local economies of Nebraska.

A significant effect of the Keystone XL project would be the generation of economic activity. That activity would consist of:

- Sales or output - by TransCanada in the construction and development of the pipeline and the annual spending that would result from its ongoing operation and maintenance – both direct investment and multiplier effects.
- Wages and salaries - the income of Nebraska's citizens – including to those self-employed; both direct and multiplier effects.
- Jobs – construction and spin-off jobs from the pipeline's construction, operation, and maintenance; both direct and multiplier effects.
- Tax revenues – to the state and to the local economies along the pipeline's route; both direct and indirect effects.

While each of these impacts will be examined in detail in the chapters that follow, the tax implications of the current Keystone pipeline (not XL) have been visible in Nebraska's news recently: A July 2012 article in the Omaha World-Herald noted that the valuation of the Keystone pipeline's personal property and real estate rose from \$145.3 million in 2011 to \$540 million for 2012 after construction was completed last year – and that while the impact to rural schools and counties will be limited due to spending lids placed on local governments and state aid to schools laws, the additional revenue will benefit individual taxpayers, particularly farmers, by shifting the general property tax load away from them and onto TransCanada.

Based on the 2011 valuation, TransCanada paid \$2.2 million in Nebraska property taxes in 2012 and the company estimates they will pay about \$8.5 million next year. As almost all of the valuation attributable to the pipeline is personal property, mainly the steel pipe used to carry the crude oil, and by state law such personal property is depreciated until it has no value and generates no taxes, the tax value of the pipeline will be reduced to zero after 15 years when it is fully depreciated.<sup>9</sup>

<sup>6</sup> <http://www.transcanada.com/keystone.html>

<sup>7</sup> <http://www.transcanada.com/6075.html>

<sup>8</sup> For this study, it is assumed that construction of the XL pipeline will be completed in 2014 with operations beginning January 2015.

<sup>9</sup> <http://www.omaha.com/article/20120814/NEWS/120819881/1707>



Another Omaha World-Herald article a month later further indicated that the amount of tax revenue that will be generated by the Keystone XL project is uncertain, but that it is safe to assume it will produce more in tax benefits than the first pipeline, because it will be larger (a 36-inch pipe versus a 30-inch pipe) and longer (274 miles versus 215 miles across Nebraska).<sup>10</sup> This study will estimate the XL pipeline on state and local tax collections.

Figure 1.1 shows the revised path by county that the pipeline will take across Nebraska. The new route will span 274.4 miles.

**Figure 1.1: Nebraska path of Keystone pipeline by county, September 2012**



“...it is safe to assume it will produce more in tax benefits than the first pipeline because it will be larger (a 36-inch pipe versus a 30-inch pipe) and longer (274 miles versus 215 miles across Nebraska).”

<sup>10</sup><http://www.omaha.com/article/20120715/NEWS/707159928/1016>



Table 1.1 lists the Nebraska counties which the pipeline will cross from the northern entry county of Keya Paha to the southern exit county of Jefferson. As listed, Holt County will receive the largest total capital investment. In terms of pipeline services costs, Holt County also is highest among the Nebraska counties. However, the impacts will not be limited to these counties since XL pipeline workers and TransCanada will spend a significant portion of overall expenditures outside these counties but inside the State of Nebraska. Furthermore, many XL vendors will reside outside the construction counties but in Nebraska. At this point in time, it is expected that 50 percent of pipeline, pump stations and terminals will be produced in Canada and 50 percent in Arkansas.

| Table 1.1: XL Pipeline by Nebraska County |                      |   |
|---|----------------------|---|
| Nebraska County                           | Total Pipeline Miles | Material Cost<br>(pipeline, pump stations, terminals and sales taxes) |
| Keya Paha                                 | 16.7                 | \$ 14,742,618   |
| Boyd                                      | 8.4                  | \$ 7,458,604  |
| Holt                                      | 54.7                 | \$ 63,244,808   |
| Antelope                                  | 43.3                 | \$ 53,210,577   |
| Boone                                     | 28.3                 | \$ 24,977,615   |
| Nance                                     | 14.7                 | \$ 27,953,442   |
| Merrick                                   | 7.9                  | \$ 6,996,260  |
| Polk                                      | 13.9                 | \$ 12,240,962   |
| York                                      | 28.8                 | \$ 25,429,319   |
| Fillmore                                  | 14.7                 | \$ 27,871,734   |
| Saline                                    | 14.9                 | \$ 13,115,095   |
| Jefferson                                 | 28.1                 | \$ 39,780,352   |
| Total for Nebraska                        | 274.4                | \$ 317,021,385  |

Source: Consumer Education Alliance as provided by TransCanada

## Chapter 2: Direct Spending (Round One)

### Construction

As a starting point, Goss & Associates estimates the direct spending associated with the XL Pipeline. The U.S. State Department estimates that roughly 10 percent to 15 percent of the jobs generated due to construction of the XL pipeline are expected to be hired locally.<sup>11</sup> In the analysis that follows, it is assumed that \$104.8 million of the total labor costs of \$1.38 billion during the construction phase will be paid to current Nebraska workers, or workers that ultimately become permanent residents of Nebraska. However, a portion of the Montana and South Dakota labor costs will also accrue to Nebraska workers. Nebraska accounts for 6.1 percent of construction and extraction occupations in the area where most workers have permanent residence. Thus, it is assumed that Nebraska workers will compose 6.1 percent of the XL construction workers in Montana and South Dakota.<sup>12</sup>

Of course a large share of the direct jobs created by the pipeline will be filled by non-Nebraskans. A Cornell study that examined the expected Keystone XL construction activity concluded that it is likely that only 11 percent of Keystone XL pipeline workers would be residents of the state.<sup>13</sup> This study will use this same conservative 11 percent value.<sup>14</sup> That is, this study will assume that 11 percent of pipeline workers in Nebraska will be Nebraska residents.

However, it is also likely that a share of XL pipeline workers in Montana and South Dakota will also be Nebraska residents. This study will assume that Nebraska workers will represent the same share of the direct workers in Montana and South Dakota that they represent in total area construction trades. This study assumes that workers will come from the following states: Colorado, Iowa, Kansas, Missouri, Montana, North Dakota, Oklahoma, Minnesota, and South Dakota. Nebraska has 6.1 percent of the construction and extraction occupations in the total area. Thus, it will be assumed that Nebraska workers will receive 6.1 percent of the XL pipeline jobs in Montana and South Dakota. Using this methodology, Nebraska workers are expected to fill approximately 10.4 percent of the jobs in Montana, South Dakota and Nebraska. This is a conservative estimate since Nebraska workers will likely receive a share of the XL pipeline jobs in the portion of the pipeline construction south of Nebraska. This study assumes that Nebraska workers will not work on the southern portion of the Keystone XL Pipeline.



<sup>11</sup>US State Department's Final Environmental Impact Statement (FEIS), Socioeconomics, Section. 3.10-57. <http://www.keystonepipeline-xl.state.gov/clientsite/kestonexl.nsf?Open>.

<sup>12</sup>It is assumed that workers Keystone XL workers will come predominately from Colorado, Iowa, Kansas, Minnesota, Montana, Nebraska, North Dakota, and South Dakota.

<sup>13</sup> This is slightly larger than the U.S. State Department's estimate of 10 percent Nebraska residents.

<sup>14</sup>"Pipe Dreams? Jobs Gained, Jobs Lost by the Construction of Keystone XL," Skinner and Sweeney, A Report by Cornell University Global Labor Institute, January 2012, p. 9.

As listed in Table 2.1 TransCanada is expected to spend approximately \$75 million for land rights in Nebraska. This value includes the direct purchase of land, easements and the value of crop losses due to the construction phase of the XL pipeline. Pipeline services costs include spending for regulatory requirements, including permitting, environmental and safety requirements, community relations, engineering, surveying, construction management, inspections, power infrastructure, commissioning, and pre-operations.<sup>15</sup>

|   | Total Project Costs | Total NE Spending 2009-14 |
|---|---------------------|---------------------------|
| Land  | Not known           | \$75,000,000              |
| Labor costs (pipeline, pump stations and terminals) | \$1.38 billion      | \$104,785,005             |
| Pipe (excludes sales & use taxes)                   | \$734.6 million     | \$0                       |
| Pump stations (excludes sales & use taxes)          | \$254.8 million     | \$0                       |
| Pipeline services costs                             | \$874.7 million     | \$72,189,060              |
| Non-NE workers' spending in NE                      | n.a.                | \$328,228,077             |
| <b>Total direct spending construction</b>           |                     | <b>\$580,202,142</b>      |

Source: Goss & Associates based on data provided by CEA; SD has a sales tax on services.

It is assumed that 100 percent of pipelines and pump stations are purchased from businesses located outside of Nebraska. A total of \$580.2 million in spending related to the construction of Nebraska’s pipeline is expected to be made to Nebraska individuals and businesses. Also listed in Table 2.1 is spending by non-Nebraska workers during the construction phase of the project of \$328,228,077.<sup>16</sup> See Appendix D for a calculation and breakdown of all direct spending in Table 2.1.

The direct ending listed in the final column in Table 2.1 will be input to the IMPLAN multiplier system to determine spillover impacts. These are estimated in Chapter 3.

In addition to construction impacts, XL Pipeline operations will create economic activity for the full period of operations. For this study, impacts for the first 15 years of operations are estimated.

It is assumed that 100 percent of pipelines and pump stations are purchased from businesses located outside of Nebraska.

<sup>15</sup> Percent spent in Nebraska: regulatory, including permitting (50%), environmental (2.5%), safety (2.5%), community relations (\$5 million), power infrastructure (100%), commissioning (10%), and pre-operations (10%).

<sup>16</sup>Based on Dean Runyan Associates, study, Nebraska Travel Impacts, 2003-2008P, completed for the Nebraska Department of Economic Development, May 2009. [http://www.deanrunyan.com/doc\\_library/NEImp.pdf](http://www.deanrunyan.com/doc_library/NEImp.pdf). Visitors to Nebraska as a share of their daily spending allocate 19.1% to accommodations, 0.8% to air transport, 29.5% to ground transportation, 5.4% to food stores, 12.4% to retail sales, 7.3% to entertainment & recreation, and 25.5% to eating establishments. This study will use these same shares. The estimate recognizes the per diem spending by Nebraska residents in Montana and South Dakota during the construction phase, subcontracting this spending from direct spending.

## Operations Phase

### Materials and Personnel

As displayed in Table 2.2, during the operations phase of the Keystone XL, TransCanada will spend \$570,514,659 on both materials and personnel in Nebraska. According to TransCanada:

There will be an estimated 35 permanent employees during the operational phase of the project which includes approximately 10 permanent employees in the Omaha, NE office. These employees (excluding the 10 in Omaha, NE) will be basically equally distributed along the Keystone XL pipeline through Montana, South Dakota and Nebraska. Moreover, contractors will be providing specialized support for operations. We estimate that contractor employment for operations will be equivalent to 15 full time positions. As of this point in time, the precise number, location, and payroll for these employees has not yet been determined.<sup>17</sup>

| Year                 | Jobs | Direct Spending |
|----------------------|------|-----------------|
| 2015                 | 23   | \$38,334,080    |
| 2016                 | 23   | \$38,352,584    |
| 2017                 | 23   | \$38,587,262    |
| 2018                 | 23   | \$38,587,262    |
| 2019                 | 18   | \$37,965,142    |
| 2020                 | 18   | \$37,965,141    |
| 2021                 | 23   | \$38,587,262    |
| 2022                 | 18   | \$37,359,175    |
| 2023                 | 18   | \$37,965,142    |
| 2024                 | 18   | \$37,965,142    |
| 2025                 | 18   | \$37,965,142    |
| 2026                 | 18   | \$37,965,142    |
| 2027                 | 18   | \$37,965,142    |
| 2028                 | 10   | \$36,363,784    |
| 2029                 | 23   | \$38,587,262    |
| Total (average jobs) | 19.5 | \$570,514,659   |

Source: Goss & Associates from IMPLAN model

Direct spending listed in the final column of Table 2.2 is provided by the IMPLAN system once the number of jobs is estimated.

The next chapter uses the direct spending in Tables 2.1 and 2.2 to estimate overall or total impacts

<sup>17</sup>I requested an estimate from CEA regarding TransCanada spending after installation of the Keystone XL pipeline. This statement was provided by a Keystone XL project representative to Nebraska’s Department of Environmental Quality and the U.S. Department of State.

## Chapter 3: Estimated Economic Impacts – Direct, Indirect and Induced

### Introduction:

The expenditures of Keystone XL, its workers, contractors and vendors provide a source of jobs and income for residents of the state and counties through which it crosses. This spending for locally-supplied goods and services produces a first round of impacts. This initial spending leads to further spending, with a resultant impact that is a multiple of “first round” spending. Thus, the impact of Keystone XL continues after the initial money is spent for goods and services. It supports many enterprises and individuals indirectly linked to the pipeline, residential housing, retail, restaurant, and hotel sectors.

This initial spending leads to further spending, with a resultant impact that is a multiple of “first round”

Based on 2013 to 2029 spending listed in Tables 2.1 and 2.2, the task is to estimate the economic impact of these outlays of Keystone XL. Using input-output multipliers, the study provides sales, earnings and job impacts in addition to estimating the impact of the initial spending on state and local tax collections. Input-output multipliers show how spending initiated in one industry or several industries, pipeline construction and operations in this case, is filtered throughout

the local and state economies. For each dollar generated by Keystone XL, there are direct effects for the initial spending plus the spillover impacts into the rest of the Nebraska economy.

Input-output multiplier models are the most frequently-used type of analysis tool for economic impact assessment. Input-output analysis assumes that each sector purchases products and services from other sectors and then sells its output to other sectors and/or final consumers. The multiplier system that will be used is IMPLAN.<sup>18</sup> This is a widely used and accepted methodology and is described in more detail in the accompanying appendices.

In tailoring the IMPLAN model for Keystone XL spending, Goss & Associates used conservative assumptions. Impacts were calculated for five categories that reflect the contribution of Keystone XL to the state and local economy:

1. Output-contribution to overall economic activity.
2. Value added or gross domestic product.
3. Employment-contribution to the job base.
4. Labor income- the sum of wages, salaries and self employment income.
5. Taxes-contribution to state and local tax collections.

Impacts are estimated for the state of Nebraska, the counties through which the pipeline passes and individual industries. The results presented in this study are generated for the period 2013 - 2029. All estimates listed in this chapter are in 2012 dollars. Appendix A lists discount rates used throughout this study.

<sup>18</sup>**The IMPLAN Software.** IMPLAN is a computer software package that consists of procedures for estimating local input-output models. The acronym is for Impact Analyses and Planning. The U.S. Forest Service, in cooperation with the Federal Emergency Management Agency and the U.S. Department’s the Interior’s Bureau of Land Management originally developed IMPLAN to assist in land and resource management planning. Since 1993, the Minnesota IMPLAN Group Inc. in Stillwater, Minnesota with exclusive rights has continued development and maintenance of the IMPLAN system. This group licenses and distributes the software to users. IMPLAN is one of the most widely used and accepted software packages for impact assessment. Goss & Associates is a licensed user of IMPLAN.

### Total Impact on Nebraska Economic Activity

The first step in measuring impacts was to input Keystone XL direct spending from Tables 2.1 and 2.2 into the IMPLAN Multiplier System. Table 3.1 summarizes total impacts between 2013 and 2029. As listed, the initial spending generated more than \$1.8 billion in output, or sales, \$956.0 million in labor income, and supported an average of 916 jobs per year between 2013 and 2029. During the construction phase, an average of 5,517 jobs will be supported for the Nebraska economy. A portion of these jobs are Nebraska workers employed by Trans Canada in Montana and South Dakota.

In sales or output, the impact of Keystone XL on the economy was \$1,843,603,216 with the breakdown by year contained in Table 3.2.

| Table 3.1: Impact of Keystone XL on Nebraska Economy, 2013-29 (2012 dollars) |               |                 |                           |
|--|---------------|-----------------|---------------------------|
|  | Construction  | Operations      | Construction & Operations |
|  | 2013-14       | 2015-29         | 2013 - 2029               |
| Output   | \$817,399,801 | \$1,026,203,415 | \$1,843,603,216           |
| Jobs (average) per year  | 5,517         | 302             | 916                       |
| Labor income   | \$375,637,976 | \$580,328,007   | \$955,965,983             |
| Source: IMPLAN Multiplier System   |               |                 |                           |

| Table 3.2: Impact of Keystone XL on Output, 2013- 2029 (2012 dollars) |               |                 |                 |
|---|---------------|-----------------|-----------------|
| Year  | Construction  | Operations      | Total Output    |
| 2013  | \$411,906,145 |                 | \$411,906,145   |
| 2014  | \$405,493,656 |                 | \$405,493,656   |
| 2015  |               | \$68,914,864    | \$68,914,864    |
| 2016  |               | \$68,941,900    | \$68,941,900    |
| 2017  |               | \$69,346,707    | \$69,346,707    |
| 2018  |               | \$69,346,717    | \$69,346,717    |
| 2019  |               | \$68,314,811    | \$68,314,811    |
| 2020  |               | \$68,314,811    | \$68,314,811    |
| 2021  |               | \$69,346,707    | \$69,346,707    |
| 2022  |               | \$67,203,591    | \$67,203,591    |
| 2023  |               | \$68,314,811    | \$68,314,811    |
| 2024  |               | \$68,314,811    | \$68,314,811    |
| 2025  |               | \$68,314,810    | \$68,314,810    |
| 2026  |               | \$68,314,811    | \$68,314,811    |
| 2027  |               | \$68,314,811    | \$68,314,811    |
| 2028  |               | \$65,552,546    | \$65,552,546    |
| 2029  |               | \$69,346,707    | \$69,346,707    |
| Total   | \$817,399,801 | \$1,026,203,415 | \$1,843,603,216 |
| Source: IMPLAN Multiplier System                                      |               |                 |                 |



The number of jobs created in conjunction with the Keystone XL development for each year from 2013 to 2029 is presented in Table 3.3. As listed, an average of 5,517 jobs are supported during construction and 302 jobs during operations.

**Table 3.3: Impact of Keystone XL on Jobs, 2013-2029**

| Year                                   | Number of Jobs Construction Phase 2013-14 | Number of Jobs Operation Phase 2015-29 | Number of Jobs Construction and Operations 2013 – 2029 |
|--|---|--|--|
| 2013                                   | 5,543                                     |  | 5,543  |
| 2014                                   | 5,491                                     |  | 5,491  |
| 2015                                   |   | 308                                    | 308  |
| 2016                                   |   | 308                                    | 308  |
| 2017                                   |   | 309                                    | 309  |
| 2018                                   |   | 309                                    | 309  |
| 2019                                   |   | 301                                    | 301  |
| 2020                                   |   | 301                                    | 301  |
| 2021                                   |   | 309                                    | 309  |
| 2022                                   |   | 297                                    | 297  |
| 2023                                   |   | 301                                    | 301  |
| 2024                                   |   | 301                                    | 301  |
| 2025                                   |   | 301                                    | 301  |
| 2026                                   |   | 301                                    | 301  |
| 2027                                   |   | 301                                    | 301  |
| 2028                                   |   | 283                                    | 283  |
| 2029                                   |   | 309                                    | 309  |
| <b>Average Number of Jobs per Year</b> | <b>5,517</b>                              | <b>302</b>                             | <b>916</b>   |

Source: IMPLAN Multiplier System

It should be noted that the jobs listed in Table 3.3 include direct plus spillover jobs and can be part-time as well as full-time.

Detail regarding Keystone XL's impact on wages and salaries - \$956.0 million between 2013 and 2029 - is provided in Table 3.4.

| Table 3.4: Impact of Keystone XL on labor income, 2013-29 (2012 dollars) |               |               |                    |
|--|---------------|---------------|--------------------|
| Year   | 2013-14       | 2015-29       | Total labor income |
| 2013   | \$188,947,810 |               | \$188,947,810      |
| 2014   | \$186,690,165 |               | \$186,690,165      |
| 2015   |               | \$38,878,269  | \$38,878,269       |
| 2016   |               | \$38,892,424  | \$38,892,424       |
| 2017   |               | \$39,033,246  | \$39,033,246       |
| 2018   |               | \$39,033,254  | \$39,033,254       |
| 2019   |               | \$38,634,185  | \$38,634,185       |
| 2020   |               | \$38,634,185  | \$38,634,185       |
| 2021   |               | \$39,033,248  | \$39,033,248       |
| 2022   |               | \$38,311,763  | \$38,311,763       |
| 2023   |               | \$38,634,185  | \$38,634,185       |
| 2024   |               | \$38,634,185  | \$38,634,185       |
| 2025   |               | \$38,634,185  | \$38,634,185       |
| 2026   |               | \$38,634,185  | \$38,634,185       |
| 2027   |               | \$38,634,187  | \$38,634,187       |
| 2028   |               | \$37,673,258  | \$37,673,258       |
| 2029   |               | \$39,033,248  | \$39,033,248       |
| Total  | \$375,637,976 | \$580,328,007 | \$955,965,983      |
| Source: IMPLAN Multiplier System   |               |               |                    |

Listed in table 3.5 are the top ten industries impacted by Keystone XL spending for 2013 and 2014. As shown, the largest impacts across all categories were in construction of other new nonresidential structures. Data show that outside of the construction industry, food services industries add an average of 1,076 jobs per year with a total labor income for the two years of \$32,707,193.

Table 3.5: Top 10 Nebraska industries receiving impacts from Keystone XL spending, 2013 and 2014 combined (2012 dollars)

| Industries   | Jobs<br>(average per year) | Labor Income  |
|--|----------------------------|---------------|
| Construction of other new nonresidential structures                  | 1,343                      | \$118,138,092 |
| Food services and drinking places                                    | 1,076                      | \$32,707,193  |
| Hotels and motels, including casino hotels                           | 425                        | \$15,437,331  |
| Amusement parks, arcades, and gambling industries                    | 232                        | \$7,473,191   |
| Retail Stores - General merchandise                                  | 165                        | \$7,919,749   |
| Real estate establishments   | 141                        | \$3,155,683   |
| Retail Stores - Gasoline stations                                    | 141                        | \$6,735,921   |
| Retail Stores - Food and beverage                                    | 127                        | \$5,735,184   |
| Architectural, engineering, and related services                     | 92                         | \$13,101,147  |
| Securities, commodity contracts, investments, and related activities | 43                         | \$1,837,762   |
| All other industries   | 1,734                      | \$163,396,723 |
| Total Effect   | 5,517                      | \$375,637,976 |

Source: IMPLAN Multiplier System

## Impact on State and Local Tax Collections

Not only do businesses examined in this study that provide goods and services to Keystone XL pay taxes on profits, their employees, residents and vendors, as well as businesses tied to these groups, pay state and local taxes. Table 3.6 provides detailed estimates of the impact on state and local property taxes, and Table 3.7 lists the impacts on sale and use taxes.

### Property Taxes

TransCanada will be required to pay personal property taxes on the pipeline for the first 15 years of operations. It is assumed that taxes are paid on the installed costs with the pipeline fully depreciated after 15 years of operation. These estimates assume that there are no major capital improvements to the pipelines that increase the value of the pipeline.

TransCanada will be required to pay personal property taxes on the pipeline for the first 15 years of operation.

Nebraska adjusted basis for property taxes is the company's federal basis. Generally it is the cost of the item, including sales tax, freight, installation, testing charges, and other fees or taxes associated with the acquisition of the property. The state will assess the pipeline when it is operational as of January 1. In this study, it is assumed that the pipeline will be operational on January 1, 2015. If the pipeline owns any property in the state prior to being operational, that property is subject to local assessment. If it becomes operational in the middle of the year, then it is locally assessed for that year and transfers to state assessment the following year. The actual rate that it will be taxed is the actual local consolidated rate.<sup>19</sup>

Table 3.7 provides details of sales tax receipts emanating from the pipeline counties. It is assumed that TransCanada will pay a use tax of 5.5 percent on the pipeline cost plus pump station costs. Furthermore, it is assumed that TransCanada will not pay a sales or use tax to another state or local government prior to installation in Nebraska. As listed, TransCanada is expected to pay use taxes totaling \$15,197,386 to Nebraska in 2012 dollars. It is assumed that none of the pipeline will incur local option sales taxes before arrival in Nebraska. These use tax estimates include only use taxes on pipelines and pump stations and omit sales and use tax collections on indirect sales such as restaurant spending by pipeline workers. The taxes listed in Table 3.7 are state use taxes and are thus based on a rate of 5.5 percent.

Table 3.8 provides details on total estimated tax collections between 2013 and 2029. As indicated in Table 3.8, the outcome is more than \$134.6 million in state and local tax collections, composed of more than \$58.6 million in property taxes, \$39.1 million in sales taxes, \$20.1 million in individual income taxes, \$3.3 million in corporate income taxes and \$13.5 million in other taxes. As listed, it is estimated that construction and operations of the Keystone pipeline between 2013 and 2029 will generate approximately \$134,649,004 in tax collections for the state in 2012 dollars.

<sup>19</sup>“As a rough estimate, since pipelines are in the rural areas more than cities, the average levy is more like 1.8 per 100. The overall average state levy is closer to 1.95.” (Nebraska Department of Revenue official). TransCanada will also pay property taxes on any significant replacements or upgrades. The impacts of these replacements/upgrades are not included here.

**Table 3.6: Direct property tax receipts, 2015-2029**

| Industries           | Total gross property taxes | 2012 dollars |
|----------------------|----------------------------|--------------|
| Antelope             | \$2,299,848                | \$1,525,186  |
| Boone                | \$1,163,542                | \$771,624    |
| Boyd                 | \$9,866,190                | \$6,542,941  |
| Fillmore             | \$8,300,850                | \$5,504,858  |
| Holt                 | \$3,896,508                | \$2,584,039  |
| Jefferson            | \$4,360,737                | \$2,891,901  |
| Keya Paha            | \$1,091,416                | \$723,792    |
| Merrick              | \$1,909,590                | \$1,266,379  |
| Nance                | \$3,966,974                | \$2,630,770  |
| Polk                 | \$4,347,990                | \$2,883,448  |
| Saline               | \$2,045,955                | \$1,356,812  |
| York                 | \$6,205,735                | \$4,115,444  |
| Total property taxes | \$49,455,336               | \$32,797,192 |

Source: IMPLAN Multiplier System

**Table 3.7: Sales or use tax receipts, 2013-14: pipeline and pump stations only (2012 dollars)**

| County                | Total Gross Sales or Use Taxes | Total Discounted Sales or Use Taxes |
|-----------------------|--------------------------------|-------------------------------------|
| Antelope              | \$768,573                      | \$706,732                           |
| Boone                 | \$388,837                      | \$357,551                           |
| Boyd                  | \$3,297,123                    | \$3,031,833                         |
| Fillmore              | \$2,774,011                    | \$2,550,811                         |
| Holt                  | \$1,302,151                    | \$1,197,378                         |
| Jefferson             | \$1,457,288                    | \$1,340,033                         |
| Keya Paha             | \$364,734                      | \$335,387                           |
| Merrick               | \$638,154                      | \$586,808                           |
| Nance                 | \$1,325,699                    | \$1,219,032                         |
| Polk                  | \$1,453,029                    | \$1,336,116                         |
| Saline                | \$683,725                      | \$628,712                           |
| York                  | \$2,073,857                    | \$1,906,992                         |
| Total state use taxes | \$16,527,181                   | \$15,197,386                        |

Source: IMPLAN Multiplier System

Table 3.8: Impact of Keystone XL on Tax Collections, 2013-29 (2012 dollars)

| Year  | Property Taxes | Sales Taxes  | Individual Income Taxes | Corporate Income Taxes | Other Taxes  | Total State & Local Taxes |
|-------|----------------|--------------|-------------------------|------------------------|--------------|---------------------------|
| 2013  | \$10,282,562   | \$9,638,928  | \$3,695,814             | \$795,260              | \$4,258,856  | \$28,671,420              |
| 2014  | \$10,218,721   | \$9,579,663  | \$3,651,586             | \$786,526              | \$4,227,566  | \$28,464,062              |
| 2015  | \$5,223,008    | \$1,332,890  | \$856,691               | \$115,218              | \$336,481    | \$7,864,289               |
| 2016  | \$4,608,469    | \$1,333,501  | \$857,084               | \$115,271              | \$336,635    | \$7,250,959               |
| 2017  | \$4,045,490    | \$1,338,852  | \$860,523               | \$115,733              | \$337,986    | \$6,698,584               |
| 2018  | \$3,530,272    | \$1,338,852  | \$860,523               | \$115,733              | \$337,986    | \$6,183,367               |
| 2019  | \$3,059,277    | \$1,323,074  | \$850,382               | \$114,369              | \$334,003    | \$5,681,106               |
| 2020  | \$2,629,210    | \$1,323,074  | \$850,382               | \$114,369              | \$334,003    | \$5,251,039               |
| 2021  | \$2,237,005    | \$1,338,852  | \$860,523               | \$115,733              | \$337,986    | \$4,890,099               |
| 2022  | \$1,879,809    | \$1,311,806  | \$843,139               | \$113,395              | \$331,159    | \$4,479,307               |
| 2023  | \$1,561,075    | \$1,323,074  | \$850,382               | \$114,369              | \$334,003    | \$4,182,904               |
| 2024  | \$1,561,075    | \$1,323,074  | \$850,382               | \$114,369              | \$334,003    | \$4,182,904               |
| 2025  | \$1,561,075    | \$1,323,074  | \$850,382               | \$114,369              | \$334,003    | \$4,182,904               |
| 2026  | \$1,561,075    | \$1,323,074  | \$850,382               | \$114,369              | \$334,003    | \$4,182,904               |
| 2027  | \$1,561,075    | \$1,323,074  | \$850,382               | \$114,369              | \$334,003    | \$4,182,904               |
| 2028  | \$1,517,993    | \$1,286,561  | \$826,914               | \$111,213              | \$324,786    | \$4,067,467               |
| 2029  | \$1,579,691    | \$1,338,852  | \$860,523               | \$115,733              | \$337,986    | \$4,232,785               |
| Total | \$58,616,882   | \$39,100,275 | \$20,125,994            | \$3,300,398            | \$13,505,448 | \$134,649,004             |

Source: IMPLAN Multiplier System



## Appendix A: Discount Factors

In Table A.1 is listed the discount factor for the period 2013 – 2029. Goss & Associates uses the average yield for Moody’s AAA corporate bonds over the past fifteen years from 1998 to 2012. The average yield was 5.8 percent over the period.

| Table A1: Discount factor by year, 2013-2030 |      |                 |
|--|------|-----------------|
| Period                                       | Year | Discount factor |
| 1  | 2013 | 1.06            |
| 2  | 2014 | 1.12            |
| 3  | 2015 | 1.18            |
| 4  | 2016 | 1.25            |
| 5  | 2017 | 1.32            |
| 6  | 2018 | 1.40            |
| 7  | 2019 | 1.48            |
| 8  | 2020 | 1.57            |
| 9  | 2021 | 1.66            |
| 10   | 2022 | 1.75            |
| 11   | 2023 | 1.86            |
| 12   | 2024 | 1.96            |
| 13   | 2025 | 2.08            |
| 14   | 2026 | 2.20            |
| 15   | 2027 | 2.32            |
| 16   | 2028 | 2.46            |
| 17   | 2029 | 2.60            |

Source: Based on Moody’s Seasoned AAA Corporate Bond Yield, 1998-2012 from Federal Reserve of St. Louis

## Appendix B: Measuring the Economic Impact of the XL Pipeline

### An Overview

The development of the Keystone XL pipeline will be an important stimulus of economic growth for the state of Nebraska and the counties through which it crosses. Furthermore, Keystone XL vendors contribute to the economy through their own employment and payroll, and through purchases from their own vendors. Payments to these vendors are an important source of growth for the state economy. Thus, the XL pipeline produces benefits for the Nebraska taxpayer, both directly and indirectly.

...direct benefits for the Nebraska taxpayer include the receipt of sales taxes on retail purchases by XL employees.

As a result of the widespread distribution of construction and operations of the XL pipeline, the pipeline will influence the state's economy in many ways. As discussed earlier, the presence of Keystone XL increases the spending by non-Nebraska residents in Nebraska. Furthermore, construction and operations of the pipeline, in the long run, encourages the startup and/or relocation of retail businesses and manufacturing firms to the state. Access to Keystone XL jobs increases employment opportunities and assists the state in retaining and attracting individuals to the state, thereby helping to create a "brain gain."<sup>20</sup>

In addition to these growth dynamics, there also is economic activity related to the direct expenditures by Keystone XL vendors, such as payroll, local jobs and income. Furthermore, Keystone XL indirectly affects the overall level of the state's economic activity. For example, the office supplies industry provides jobs and income for workers in the area as a result of TransCanada spending on computers, pens and paper.

... Keystone XL, by providing area residents with housing, restaurants, and other retail establishments, creates sales, wages, jobs, and taxes for Omaha.

Large portions of Keystone XL spending are made in the state economy. That portion spent locally adds to the state's income. Economic impacts that take place outside the state economy, for example spending in Kansas, are called leakages and reduce overall impacts. They are excluded when estimating economic impacts of the local area.

Additionally, Keystone XL increases retail sales in the state as employees and visitors who reside outside Nebraska spend a portion of their wages in the state. In other words, Keystone XL contributes to the region's export of retail goods. These sales have a positive impact on the state by adding jobs and income in the retail and related industries. Figure B.1 demonstrates the four components of the total economic impact: 1) the Direct Economic Impact, 2) the Indirect Economic Impact, 3) the Induced Economic Impact, and 4) Leakages. Each is defined on the following page.

...the XL pipeline contributes to Nebraska's economy by encouraging businesses, residents, and visitors to purchase in the state.

<sup>20</sup>In 1995, the Federal Reserve Bank of Kansas City estimated that the state of Nebraska loses over \$246 million per year as a result of the net out-migration of college educated workers (termed "brain drain").

## Direct Economic Impacts

Keystone XL spending flowing into the area has direct economic effects on the local economy via expenditures for goods and services and for employee salaries. The most obvious direct expenditures are payment of wages to Nebraska workers employed by Keystone XL. In addition, expenditures by TransCanada non-Nebraska workers employed in the state generate direct impacts on the state affecting primarily the hotel and motel industry and retail trade industries. Direct economic impacts are color coded blue in Figure B.1.

...Keystone XL increases overall area income and population, which produces another round of increased spending adding to sales, earnings and jobs.

## Indirect Economic Impacts

Keystone XL also produces indirect economic effects on the area economy. For example, XL contractors will purchase supplies from area wholesalers. Furthermore, Keystone XL encourages the startup and expansion of other businesses. Keystone XL generates indirect effects by increasing: (a) the number of firms drawn to the state, (b) the volume of deposits in the state's financial institutions and, (c) economic development. Examples of indirect economic impacts are color coded yellow on Figure B.1.

## Induced Economic Impacts

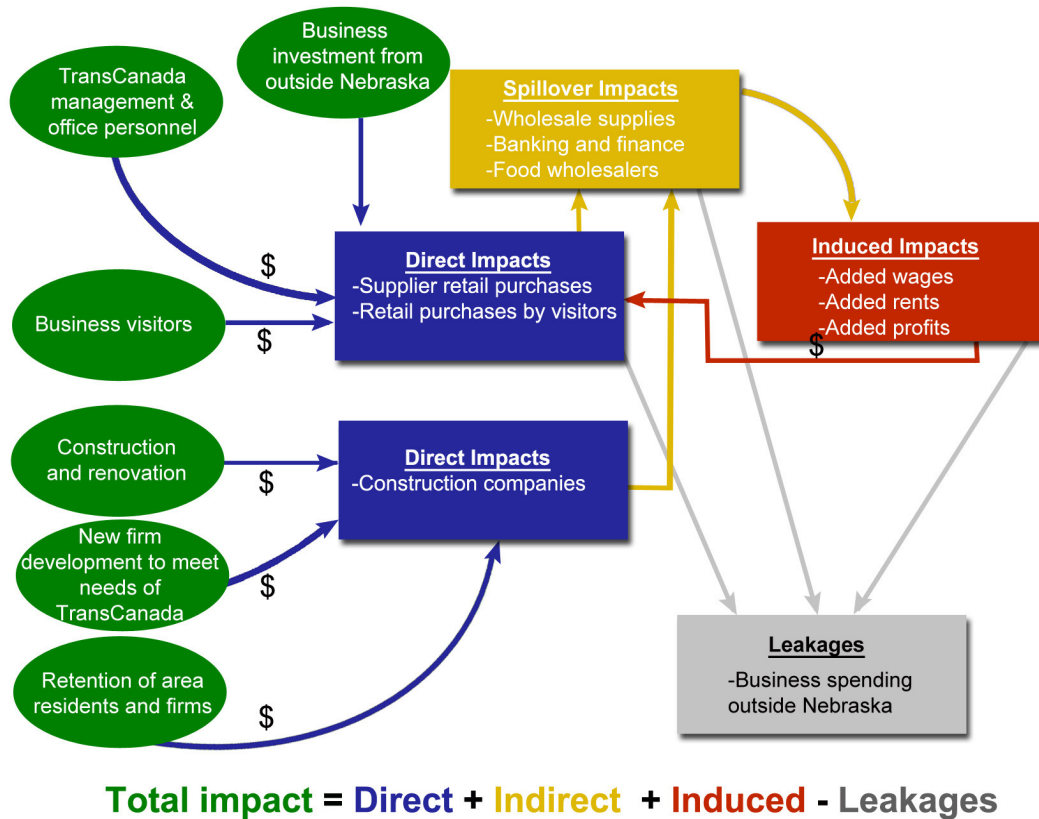
Induced impacts in the region occur as the initial spending feeds back to industries in the region when workers in the state purchase additional output from local firms in a second round of spending. That is, Keystone XL increases overall area income and population, which produces another round of increased spending adding to sales, earnings and jobs. Examples of induced economic impacts are color coded red in Figure B.1.



### Leakages

Leakages represent spending linked to the Nebraska portion of the Keystone XL pipeline that go to businesses and or individuals outside the state. For example, engineering spending related to the Nebraska XL pipeline construction going to firms located in Tulsa, Oklahoma would reduce overall Nebraska impacts. These impacts are color-coded black in Figure B.1.

Figure B.1: Direct, indirect and induced economic impacts of the XL Pipeline on Nebraska



In terms of yearly spillover, or indirect plus induced impacts, data indicate that for Nebraska,

- each \$1,000,000 of Keystone XL construction spending in the state generates another \$0.41 million in spending across other industries for a total impact of \$1.41 million.<sup>21</sup>
- Yearly, each \$1 million of yearly Keystone XL pipeline *operations* spending creates \$0.80 million of spillover impacts for a total Nebraska impact of \$1.80 million.
- Yearly, each \$1 million of Keystone XL pipeline *construction* spending creates \$645,703 thousand in wages, salaries and self-employment income for Nebraska.
- Yearly, each \$1 million of Keystone XL pipeline *operations* spending creates \$1.0 million in wages, salaries and self-employment income for Nebraska.

Keystone, XL spending outside the local economy, for example spending in Tulsa, is called a leakage and reduces the multiplier and the overall impacts.

Thus, the spillover effect creates a large, additional economic impact on the economy. For example during the construction phase, the XL pipeline creates 92 jobs and \$13.1 million in labor income for the state's architectural and engineering industry (see Table 3.5).<sup>22</sup>

Three factors determine the size of the spillover effects in communities and the state:

**Location.** Distance to suppliers affects the willingness to purchase locally. If local firms are unable to provide many of the supplies at competitive prices and there are alternative suppliers in Des Moines who are more price-competitive, then TransCanada/Keystone XL will be encouraged to spend outside the community. This results in greater leakages, lower multipliers and smaller impacts.

**Population size.** A larger population provides more opportunities for companies and workers to purchase locally. Larger population areas are associated with fewer leakages and larger multipliers.

**Clustering.** A community will gain more if the inputs required by local industries for production match local resources and are purchased locally. Thus, over time, as new firms are created to match the requirements of Keystone XL, leakages will be fewer, resulting in larger multipliers and impacts. This issue is at the heart of economic development, amplifying the impacts of the clustering of Keystone XL related facilities, investment and jobs. As the community gains more and more Keystone XL investment and jobs, educators, training institutions and suppliers become more proficient and focused on meeting the needs of the industry.

I-O models are the most frequently used analysis tools for economic impact assessment.

Furthermore, suppliers unique to Keystone XL are more likely to locate in close proximity to these organizations with the passage of time. For example, it is assumed that all pipelines and pump stations come from outside of Nebraska. Over time, some of these suppliers may move to or expand in the state of Nebraska. This not only expands income and jobs in the area, it increases the size of multipliers related to Keystone XL related organizations. However, this study assumes that this does not occur during the period 2013 to 2029. Omitting these potential impacts results in a more conservative or lower estimated economic impact.

<sup>21</sup>This number could potentially grow in years ahead as TransCanada purchases a portion of its pipeline, pump stations and terminals in Nebraska. In this study, it is assumed that 50 percent of these products are purchased outside the U.S. and 50 percent purchased inside the U.S. but outside of Nebraska.

<sup>22</sup> Source: IMPLAN Multiplier System, 2004.

Economic models can be used in order to estimate the direct, indirect and induced impacts of Keystone XL on Nebraska. These models produce estimates that reflect the characteristics of the industry in question as well as the characteristics of the state economy in terms of location, population size, and clustering. As it will be discussed in Appendix C, an input-output model is the most appropriate methodology for measuring indirect and induced impacts. Further, the IMPLAN model is the most widely-used software package for conducting the input-output analysis. We utilized IMPLAN to estimate the economic impacts of Keystone XL.





## Appendix C: Choosing a Technique to Measure Impacts

The three most common types of impact models are economic base, econometric and input-output (I-O). Many types of public and private-sector decisions require an evaluation of probable regional effects. Since important impacts are often economic, this requirement has created a need for regional economic impact models. Two of the three impact models have inherent disadvantages that markedly reduce their viability for estimating the impact of pipeline construction spending on the economy.

I-O models are the most frequently used analysis tools for economic impact assessment.

**Economic Base Model.** The economic base model divides the economy into two sectors - the local/service sector and the export sector. The chief problem with the economic base multiplier is that it is an average for all the economy, making it impossible to distinguish, for example, the impact of retail spending from that of a new manufacturing plant.

**Econometric Models.** Econometric models have two major weaknesses. First, the time series data used in constructing econometric models are often unavailable at the state and metropolitan area level, thus precluding county-level analysis. This is especially true for rural counties and for counties with small populations. Second, econometric models are costly to build and maintain.

**Input-Output (I-O) Models.** I-O models are the most frequently used type of analysis tool for economic impact assessment. Input-output is a simple, general equilibrium approach based on an accounting system of injections and leakages. Input-output analysis assumes that each sector purchases supplies from other sectors and then sells its output to other sectors and/or final consumers.

Historically, the high cost to develop I-O models prevented their widespread use in regional impact analysis. However, with the advent of “ready-made” multipliers produced by third parties, such as the U.S. Forestry Service, I-O multipliers became a much more viable option for performing impact analysis. These “ready-made” models are made region specific at a fraction of the costs of their predecessors. All purely non-survey techniques or “ready-made” multipliers take a national I-O table as a first approximation of regional inter-industry relationships. The national table is then made region-specific by removing those input requirements that are not produced in the region. This study will use the most widely recognized “ready-made” multiplier system, IMPLAN Multipliers.

**IMPLAN Multipliers.** The Forestry Service of the U.S. Department of Agriculture developed the IMPLAN Multipliers in the 1980s (U.S. Forest Service, 1985). For very populous areas, IMPLAN divides the economy into approximately 500 industrial sectors. Industries that do not exist in the region are automatically eliminated during user construction of the model (e.g. coal mining in Omaha).

IMPLAN and RIMS (Regional Input-Output Modeling System) are two of the most widely used multiplier models.

IMPLAN uses an industry-based methodology to derive its input-output coefficients and multipliers. Primary sources for data are County Business Patterns data and Bureau of Economic Analysis data. Researchers have used IMPLAN to estimate the impact of changes in military spending on the Washington state economy (Hughes, et. al, 1991).<sup>23</sup> IMPLAN and RIMS (Regional Input-Output Modeling System) are two of the most widely used multiplier models. IMPLAN has been compared to other multiplier systems and found to produce reliable estimates (Richman and Schwer, 1993).<sup>24</sup> Likewise, Crihfield and Campbell (1991), in estimating the impacts of opening an automobile assembly plant, concluded that IMPLAN's outcomes are, on balance, somewhat more accurate than RIMS.<sup>25</sup>

IMPLAN Multipliers possess the following advantages over other I-O multiplier systems:

1. Price changes are accounted for in the creation of the multipliers.
2. Employment increases or decreases are assumed to produce immediate in or out-migration.



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<sup>23</sup>Hughes, D., Holland, D. and P. Wandschneider, "The Impact of Changes in Military Expenditures on the Washington State Economy," *The Review of Regional Studies*, Vol. 21(3), 1991, pp. 221-234.

<sup>24</sup>Richman, D.S. and R.K. Schwer. "A Systematic Comparison of the REMI and IMPLAN Models: The Case of Southern Nevada." *Review of Regional Studies*, Vol. 23(2), 1993, pp. 143-161.

<sup>25</sup>Crihfield, J. B. and H. S. Campbell, Jr. 1991. "Evaluating alternative regional planning models," *Growth and Change* 22(2):1-16.

## Appendix D: Details on Direct Spending

Table D.1: Estimated Keystone XL services spending in Nebraska, 2013-14

| Industry   | 2013         | 2014         |
|--|--------------|--------------|
| Electric power generation, transmission, and distribution      | \$24,500,000 | \$24,500,000 |
| Advertising and related services                               | \$2,500,000  | \$2,500,000  |
| Legal services   | \$2,500,000  | \$2,500,000  |
| Environmental and other technical consulting services          | \$3,297,265  | \$3,297,265  |
| Miscellaneous professional, scientific, and technical services | \$3,297,265  | \$3,297,265  |
| Total  | \$36,094,530 | \$36,094,530 |

Note: Total XL services spending to support construction of the Nebraska portion of the pipeline is estimated to be \$263,781,198 (source: TransCanada, Sept. 2012)

Table D.2: Distribution of land purchases, easements and crop destruction

| Industry                            | Allocation of Land Spending |
|-------------------------------------|-----------------------------|
| Utilities                           | \$7,763,935                 |
| Transportation                      | \$13,029,155                |
| Food at home                        | \$6,101,336                 |
| Personal Care Products and Services | \$920,884                   |
| Clothing                            | \$2,419,728                 |
| Tobacco products                    | \$683,920                   |
| Reading                             | \$157,976                   |
| Miscellaneous                       | \$1,410,223                 |
| Personal insurance and pensions     | \$8,043,283                 |
| Shelter                             | \$13,296,943                |
| Education                           | \$1,234,909                 |
| Healthcare                          | \$5,409,710                 |
| Entertainment                       | \$3,801,053                 |
| Food away from home                 | \$3,845,363                 |
| Alcoholic beverages                 | \$591,446                   |
| Housekeeping                        | \$3,444,644                 |
| Cash Contributions                  | \$2,845,492                 |
| Total (2013 and 2014)               | \$75,000,000                |

Source: Goss & Associates allocation based on U.S. Bureau of Labor Statistics Consumer Expenditure Study and \$75 million TransCanada distribution

**Table D.3: Direct wages & salaries paid 2013 and 2014**

|                               | Total labor costs      | Percent Nebraska resident workers | Wages paid to Nebraska workers |
|-------------------------------|------------------------|-----------------------------------|--------------------------------|
| Montana                       | \$474,524,951          | 6.1%                              | \$29,112,486                   |
| Nebraska                      | \$413,569,148          | 11.0%                             | \$45,492,606                   |
| South Dakota (excludes taxes) | \$491,923,696          | 6.1%                              | \$30,179,913                   |
| <b>Total</b>                  | <b>\$1,380,017,795</b> | <b>7.6%</b>                       | <b>\$104,785,005</b>           |

Source: Goss & Associates based on data provided by CEA

**Table D.4: Direct spending by non-Nebraska workers in Nebraska, 2013-14**

| Implan Industry # |  | 2013                 | 2014                 |
|-------------------|--|----------------------|----------------------|
| 411               | Hotels and motels  | \$30,956,716         | \$31,734,846         |
| 332               | Transport by air   | \$1,296,616          | \$1,329,208          |
| 326               | Retail Stores - Gasoline stations                                | \$47,812,730         | \$49,014,553         |
| 324               | Retail Stores - Food and beverage                                | \$8,752,161          | \$8,972,156          |
| 329               | Retail Stores - General merchandise                              | \$20,097,554         | \$20,602,727         |
| 409               | Entertainment, amusement parks, arcades, and gambling industries | \$11,831,625         | \$12,129,025         |
| 413               | Food services and drinking places                                | \$41,329,648         | \$42,368,512         |
|                   | <b>Total</b>   | <b>\$162,077,049</b> | <b>\$166,151,028</b> |

Based on IRS per diem rate of \$154 per day for 5 days per week; 4,825 non-Nebraska workers per year; Estimates are reduced for 777 Nebraska residents working on XL pipeline in Montana and South Dakota each year; Inflation rate of 2.5%

## Appendix E: Researcher's Biography



Ernie Goss is currently the Jack MacAllister Chair in Regional Economics at Creighton University and principal of the Goss Institute in Denver, Colorado. He received his Ph.D. in Economics from The University of Tennessee in 1983 and is a former faculty research fellow at NASA's Marshall Space Flight Center. He was a visiting scholar with the Congressional Budget Office for 2003-04, and in the fall of 2005, the Nebraska Attorney General appointed Goss to head a task force examining gasoline pricing in the state.

He has published more than 100 research studies focusing primarily on economic forecasting and on the statistical analysis of business and economic data. His book Changing Attitudes toward Economic Reform during the Yeltsin Era was published by Praeger Press in 2003, and his book Governing Fortune: Casino Gambling in America was published by the University of Michigan Press in March 2007.

He is editor of *Economic Trends*, an economics newsletter published monthly with 9,000 subscribers. He is the past-president of the Omaha Association of Business Economics and past-president of the Nebraska Purchasing Management Association.

Goss produces a monthly business conditions index for the nine-state Mid-American region and the three-state Mountain region. He also conducts a survey of bank CEOs in eight Mid-American states. Results from all three surveys are cited each month in approximately 100 newspapers. Newspaper citations have included the New York Times, Wall Street Journal, Investor's Business Daily, The Christian Science Monitor, Chicago Sun Times and other national and regional newspapers and magazines. Each month 75-100 radio stations carry his Regional Economic Report.

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## Appendix F: Goss & Associates Research Consultancies, 2010-12

1. **Spring 2012.** Contract with New York First to estimate the contribution of the Property-Casualty Insurance Industry to the New York Economy. Spring 2012.
2. **Spring 2012.** Contract with the American Council of Engineering Companies of Nebraska to determine the benefits and cost of outsourcing government economic activity
3. **Spring 2012.** Contract with Lancaster County Agricultural Society to estimate the economic feasibility of Phase 3 of the Lancaster Event Center, Lincoln, NE.
4. **Winter 2012.** Contract with East Campus Realty to estimate the impact of Midtown Crossing on the City of Omaha.
5. **Fall 2011.** Contract with Iowa-Nebraska Agriculture Equipment Manufacturers to estimate the impact of a sales tax exemption on agriculture repair and replacement parts for the state of Nebraska.
6. **Summer 2011.** Contract with Kirk and Michael Engineering to gauge the impact of the Gateway Trade Zone in Pottawattamie County, Iowa.
7. **Summer 2011.** Contract with City of Ralston to estimate the impact of the new ice arena on the State of Nebraska.
8. **Winter 2010-11.** Contract with Kansas Board of Regents to examine the impact of member universities and colleges on the state economy.
9. **Fall 2010.** Contract with Nebraska Medical Research Alliance to examine the impact of cigarette tax rebates to fund medical research.
10. **Fall 2010.** Contract with Ashley-Lynn Tanning to examine the impact of exempting tanning salon services from state and local sales taxes .
11. **Fall 2010.** Contract with Nebraska Insurance Federation to examine the impact of the insurance industry on the state of Nebraska.
12. **Summer 2010.** Contract with Wyoming Business Alliance to examine state and local government spending in the state.
13. **Summer 2010.** Contract with Omaha Children's Museum to estimate its impact of on the area over the past five years.
14. **Spring 2010.** Contracts with four General Motors dealerships in Colorado, Iowa and Nebraska to estimate the impact of their closure on the communities in which they are located, on the profitability of the dealerships and on GM.
15. **Spring 2010.** Contract with NeighborWorks to estimate the impact of housing and employment programs on the citizens of Nebraska.
16. **Spring 2010.** Contract with City of Omaha to estimate, "The Financial Impact of Retiree Health Insurance Costs on Omaha, 2010-2040."
17. **Spring 2010.** Contract with Creighton University Medical School to examine the impact of the medical school on the state economy.
18. **Spring 2010.** Contract with College World Series, Inc. to estimate the impact of the 2010 College World Series on the City of Omaha.