

The Impact of Developing the Keystone XL Pipeline Project on Business Activity in the US: An Analysis Including State-by-State Construction Effects and an Assessment of the Potential Benefits of a More Stable Source of Domestic Supply



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Introduction

TransCanada Keystone Pipeline LP Ltd., proposed the Keystone Pipeline in February 2005, a \$5.2 billion project to connect reliable oil supply regions in Canada with key US refining and distribution centers. In July 2008, TransCanada announced Keystone XL, an approximately \$7 billion pipeline project that complements the original Keystone Pipeline and nearly doubles the size and capacity of the Keystone Pipeline System with an expansion to the US Gulf Coast. With Keystone XL, the Keystone Pipeline System will have the capacity to deliver approximately 1.1 million barrels per day (bbl/d) of Canadian crude oil to US markets each day.

This initiative has significant implications for the US economy. In addition to the sizable economic stimulus generated by the construction and development of the pipeline, the more stable supply of oil will lead to other positive outcomes.



While “energy independence” is often discussed in domestic policy debates, it is highly unlikely that this objective can be attained in the foreseeable future. The US currently accounts for about 25% of world energy consumption while having less than 5% of known supplies. A **more appropriate characterization of the US situation is the quest for “energy security,” meaning a supply of oil in reliable quantities from more stable and predictable sources than the volatile regions which now dominate the global market.** The availability of substantial Canadian supplies delivered in an efficient manner would bring notable economic benefits. A lower risk premium would generate cost savings and stimulate business activity. In effect, **the Keystone XL Project facilitates a long-term increase in marginal supply, which will have a modest price effect permeating the entire economy.** These benefits, of course, are over and above the **sizeable gains from the construction stimulus**, particularly in the areas directly affected.

TPG was asked to conduct a comprehensive economic impact analysis of the proposed Keystone XL Pipeline. In this report, the impact of construction and development on business activity in affected areas is presented. The positive market benefits of enhanced energy security are also described and quantified.



Highlights of Study Findings

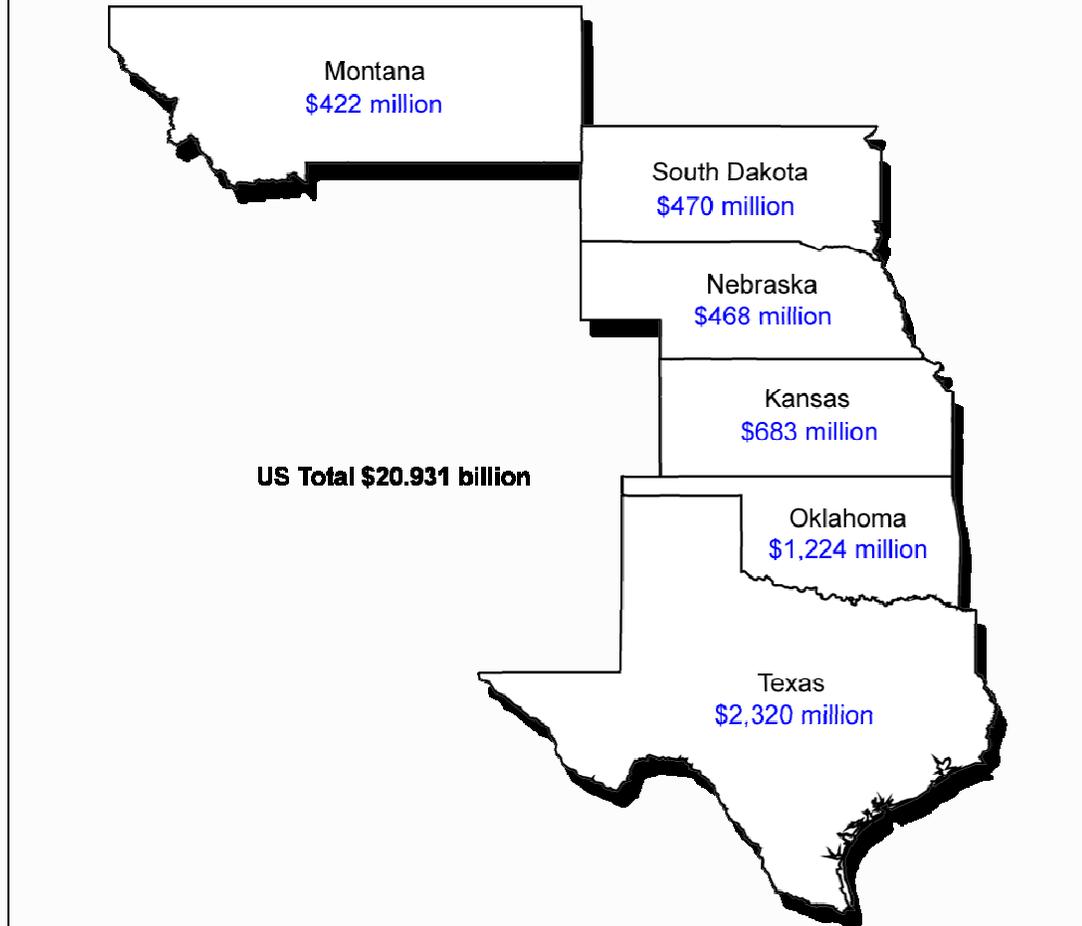
- The proposed Keystone Pipeline expansion project would link a growing supply of Canadian crude oil with major US hubs and facilitate take-away capacity from US hubs located along the pipeline.
- Local economies within the route will benefit from increases in tax revenues and business activity associated with temporary construction work in the area, and local property taxes will be paid on a continuing basis.
- Of even greater significance is the ongoing benefit to the US economy of a more stable source of consistent energy supply over an extended time horizon.
- Even with new technologies, oil discoveries, alternative fuels, and conservation efforts, the US will remain dependent on imported energy. Therefore, initiatives which improve the stability and security of imports are important both to the economy and to national security.
- Given that the US cannot produce sufficient energy to meet domestic needs, energy security is essentially the ability to obtain necessary imported energy from sources that are stable and friendly to US interests.



- A stable environment with incremental supplies from reliable sources leads to lower costs, thereby putting downward pressure on prices.
- Some aspects of the energy transportation system are nearing capacity, and future demand may be difficult to accommodate. Without timely investments, congestion through transportation systems can result in supply interruptions and other problems. In fact, many of the crude oil and petroleum products pipelines in the country are operating near capacity.
- Ensuring the availability of this critical resource is crucial to the future performance of the US economy, particularly in cases where it provides access to additional petroleum resources.
- **The Perryman Group measured the total impact of the construction and development of the proposed Keystone XL pipeline on the US economy. These effects over the life of the project were found to include \$20.931 billion in total spending, \$9.605 billion in output, and 118,935 person-years of employment. These effects are significant in the states along the route, though spillover gains to other areas, particularly with regard to manufacturing, are quite notable.**



Total Expenditures (Including Spillover or Multiplier Effects) Associated with Development of the Keystone XL Project



- Beyond the construction and development of the pipeline, **the US economy would see permanent benefits because of the savings stemming from a more reliable supply of oil to meet future needs.** Various sectors would essentially be paying less for the same input than would be the case in the absence of the Keystone XL Project, and these savings represent a net pool of funds that would be added to the production complex.

- Under “normal” oil price assumptions equivalent to the average for all of 2007, The Perryman Group found the gains in US business activity stemming from a permanent increase in stable oil supplies to include \$100.144 billion in total spending, \$29.048 billion in output, and 250,348 permanent jobs.
- In the high-price case in which costs per barrel reach the peak levels observed in the summer of 2008, The Perryman Group measured the annual impact of an increase in stable oil supplies associated with the Keystone XL Pipeline Project to include \$221.305 billion in spending, \$64.193 billion in output, and 553,235 jobs.
- Thus, this infrastructure investment would have substantial positive outcomes both during its construction and for decades to come.



The Perryman Group's Perspective

TPG is uniquely qualified to conduct this analysis. Dr. M. Ray Perryman, the founder and president of the firm, developed the US Multi-Regional Impact Assessment System (USMRIAS) and has consistently maintained, expanded, and updated it for more than 25 years. This model has the capability to provide detailed evaluations of the effects of economic activity on any county or multi-county region of the country. It has been used in hundreds of applications in all 50 states, and enjoys an excellent reputation for reliability and credibility.

TPG has extensive experience in the oil and gas sector, including assignments for the US Department of Energy and the US Department of the Interior. Projects have also been performed for many of the largest energy companies in the world. These analyses have included, among others, forecasts, impact assessments, regulatory and environmental issues, and legislative and policy initiatives. In addition, the firm has frequently assessed the construction and operation of major new infrastructure projects of all types (highways, rail facilities, airports, electric generating plants and transmission lines, communications facilities, and airports), including several studies specifically involving pipelines.



The Proposed Project

The proposed Keystone Pipeline expansion project would link a growing supply of Canadian crude oil with major US hubs and facilitate take-away capacity from US hubs located along the pipeline. This project will help address growing demand in the US as well as provide a ready market for Canadian crude. The project comprises an approximately 1,661-mile, 36-inch crude oil pipeline that would stretch from Alberta, Canada to the Gulf Coast Region in Texas.

The proposed project will also require new facilities at the Keystone Hardisty Terminal, including three operational storage tanks, an initiating pump station, and interconnections with existing pipeline systems in the Hardisty area. It also includes the addition of eight pump stations in Canada and 30 in the US to facilitate the delivery of petroleum. Additionally, the project includes a proposed 47-mile pipeline to transport crude oil from Liberty, Texas to the Houston area.¹

¹ Proposed Keystone XL Pipeline Project,
http://www.transcanada.com/keystone/keystone_pipeline.html#maps.





The project is subject to regulatory approvals in both Canada and the US. TransCanada filed its section 52 application with the National Energy Board and received approval on March 11, 2010 to construct and operate the Canadian portion of the Keystone Gulf Coast Expansion Project (Keystone XL). It has also filed an application for a Presidential Permit



with the US Department of State, authorizing the crossing of the international border. The Department of State is conducting an environmental review of the project under the National Environmental Policy Act. The project will also require approvals from the Bureau of Land Management and the US Army Corps of Engineers, as well as some state, local, and regional authorities.² **In the US, construction of the new pipeline is expected to begin in 2011 after receiving all the pertinent permits.** Construction of the pipeline between Cushing, Oklahoma and the Gulf Coast is scheduled for completion in the fourth quarter of 2011; construction of the pipeline from Montana to Steele City, Nebraska is scheduled for completion in the first quarter of 2013.³

The US portion of the existing Keystone Pipeline includes the states of North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, Missouri, and Illinois. The proposed Keystone XL Pipeline is a 1,661 mile, 36-inch crude oil pipeline that would enter the United States in Montana and proceed through South Dakota and Nebraska. It would incorporate the 298-mile portion of the Keystone Pipeline in Nebraska, Kansas, and Oklahoma to serve markets at Cushing, Oklahoma before continuing south through Oklahoma and Texas to a delivery point near existing terminals in Nederland, Texas to serve the Port Arthur, Texas marketplace.

² Proposed Keystone XL Pipeline Project,
http://www.transcanada.com/keystone/keystone_pipeline.html#maps.

³ Proposed Keystone XL Pipeline Project,
http://www.transcanada.com/keystone/keystone_pipeline.html#maps. Also see, *TransCanada Corporation Annual Report 2009: Investing in the Future Today*, TransCanada Corporation, March 2010,
http://www.transcanada.com/investor/annual_reports/2009/TCCARYE2009.pdf.



US Portion of Keystone XL Project	
State	Miles
Montana	282.366
South Dakota	312.846
Nebraska	257.189
Kansas	211.122
Oklahoma	239.468
Texas	370.540

Source: Keystone XL Project, Pipeline State/County Border Crossings MP (Based on Phase-II (May 9, 2008), Phase-I (April 15, 2008), and CE (May 6, 2008) CLs, updated September 11, 2008.)

This investment in infrastructure will benefit many communities and landowners along the way, and care must of course be taken concerning the environmental impact of construction. **These local economies on the route will benefit from increases in tax revenues and business activity associated with temporary construction work in the area.** Moreover, **local property taxes will be paid on a continuing basis for the 100-year life of the project.**⁴ Of even greater significance is the ongoing **benefit to the US economy of a more stable source of consistent energy supply over an extended time horizon.** This issue is explored in the following section.

⁴ Kansas law provides for an abatement during the first 10 years of operation of the Keystone XL pipeline, and Nebraska law calls for a 15-year amortization.



Effect of the Pipeline on US Energy Markets

As the largest importer and the third-largest producer of oil in the world, the US is highly affected by supply and demand both abroad and at home.⁵ Around the globe, **expansion in population and economic growth in the future will cause continuing increases in the demand for energy.**

The pace of world energy demand has been escalating. It took 18 years from 1977 to 1995 to increase oil demand from 60 to 70 million barrels per day; however, the next 10 million barrel increase occurred in just 8 years (1995 to 2003) when global demand reached 80 million barrels per day.⁶ While most of the new demand will occur in the developing countries and emerging markets such as China and India, it will affect other nations such as the US as well.⁷ Moreover, growth in emerging markets is expected to continue on an upward trend for the foreseeable future. Although the recent economic downturn temporarily cooled demand, the need for fuels is projected to rise as the recovery regains momentum.

The increase in the consumption of energy and the decrease in production in the United States and Europe will require effective

⁵ “World Production of Crude Oil, NGPL, and Other Liquids, 1980-2006,” *International Energy Annual 2006*, Energy Information Administration, October 23, 2008; “World Petroleum Consumption, 1980-2005” *International Energy Annual 2005*, Energy Information Administration, August 6, 2007.

⁶ *Facing the Hard Truths About Energy*, National Petroleum Council, July 2007, http://downloadcenter.connectlive.com/events/npc071807/pdf-downloads/NPC-Hard_Truths-Ch4-Geopolitics.pdf.

⁷ *Facing the Hard Truths About Energy*, National Petroleum Council, July 2007, http://downloadcenter.connectlive.com/events/npc071807/pdf-downloads/NPC-Hard_Truths-Executive_Summary.pdf.



strategies regarding the global petroleum markets. Improvements in the infrastructure for the shipment and delivery of liquid fuels like oil and liquefied natural gas will also be needed in the future.⁸ Global oil demand is projected to increase 39% from 2005 to 2030. Moreover, US demand is expected to climb substantially.⁹ The proposed Keystone XL Pipeline will help to meet rising demand in the United States.

Increasing US Energy Demand and Decreasing Production

United States oil production has been continually declining over the past 35 years. In fact, the country has gone from being the largest producer in the world to the third-largest producer. As noted, demand has steadily increased, in fact, the US consumes a monthly average of about 18.7 million barrels per day, and many forecasts predict the gap for both domestic oil, which has historically been filled with imports, and natural gas (now transitioning into a more international market) will expand over the next 25 years.¹⁰

Currently, Canada is by far the largest supplier of crude oil to the US, providing the country with 1.9 million bbl/d, followed by Mexico (996,000 bbl/d), Venezuela (913,000 bbl/d), Nigeria (896,000 bbl/d),

⁸ *Facing the Hard Truths About Energy*, National Petroleum Council, July 2007, http://downloadcenter.connectlive.com/events/npc071807/pdf-downloads/NPC-Hard_Truths-Executive_Summary.pdf.

⁹ *Energy Markets: Increasing Globalization of Petroleum Products Markets, Tightening Refining Demand and Supply Balance, and Other Trends Have Implications for US Energy Supply, Prices, and Price Volatility*, US Government Accountability Office, GAO-08-14, December 2007, <http://www.gao.gov/new.items/d0814.pdf>.

¹⁰ *Facing the Hard Truths About Energy*, National Petroleum Council, July 2007, http://downloadcenter.connectlive.com/events/npc071807/pdf-downloads/NPC-Hard_Truths-Executive_Summary.pdf. Also see, *Short Term Energy Outlook, May 11, 2010*, U.S Energy Information Administration, <http://www.eia.doe.gov/emeu/steo/pub/>.



and Saudi Arabia (881,000 bbl/d).¹¹ Net imports of energy will continue to provide a major share of the energy demand in the US, although the projected percent of the net imports share of the total consumption in the country may decline slightly. Moderation of imports is helped by increased domestically produced biofuels and decreased demand for transportation fuel due to the new Corporate Average Fuel Economy (CAFE) standards, which are federal fuel economy requirements for motor vehicles.¹² The shift to greater use of renewable energy will also have some impact, although it is not expected to change the fundamental demand for oil in the foreseeable future.

Energy independence is perhaps an ideal and certainly a politically popular concept for the country, but it is not realistic in the short term. Even with new technologies, oil discoveries, alternative fuels, and conservation efforts, the US will remain dependent on imported energy. Therefore, **initiatives which improve the stability and security of imports are important both to the economy and to national security.**

Energy Security

The previous overview concerning supply and demand, both worldwide and in this country, is integral to the topic of energy security. **Given that the US cannot produce sufficient energy to meet domestic needs, energy security is essentially the ability to obtain necessary**

¹¹ *Crude Oil and Petroleum Imports Top 15 Countries: February 2010 Import Highlights*, US Energy Information Administration, April 29, 2010, http://www.eia.doe.gov/pub/oil_gas/petroleum/data_publications/company_level_imports/current/import.html.

¹² *Annual Energy Outlook 2008*, Energy Information Administration, June 2008, <http://www.eia.doe.gov/oiaf/aeo/index.html>.



imported energy from sources that are stable and friendly to US interests.

Members of the Organization of the Petroleum Exporting Countries (OPEC) supply about 5.9 million of the 12.1 million barrels typically imported each day. OPEC decisions regarding production quotas clearly have the ability to notably affect the US economy.

In addition, **threats to the stability of the supply of imported petroleum products have the potential to negatively impact the US economy.**

The market remains extremely sensitive to any and all signals such as reports by the Iranian President on the improving status of his country's nuclear program or attacks on Nigerian pipelines by militants. Other factors can also drive up the price of oil as seen from the fallout from supply outages and uncertainties in countries such as Iraq, Nigeria, Venezuela, Indonesia, and Iran. Currently, a large component of the US supply originates in nations which are either volatile or only loosely aligned with American priorities.

The importance of energy security can hardly be overstated. The US consumes approximately 20.7 million barrels of oil per day (more than China, Japan, Germany, and Russia combined), and the **American economy and everyday life are highly dependent on secure energy sources.**¹³ In fact, oil accounts for some 95% of the energy used in the US transportation sector, which is obviously essential to the American business complex and way of life. While alternative fuels will (and should) be a vital part of the future fuel mix, it is unlikely that they will displace

¹³ Petroleum Basic Statistics, Energy Information Administration, September 2008, <http://www.eia.doe.gov/basics/quickoil.html>.



petroleum to an extent sufficient to substantially diminish the level of domestic demand.

Millions of households use distillates fuel oil to heat their homes and approximately 300,000 barrels per day are required for military operations.¹⁴ In addition, oil plays an important role in agriculture through fertilizers, pesticides, herbicides, irrigation, and farm equipment. Many other products (plastics, asphalt, road oil, lubricants, synthetic fibers, and others) are also petroleum based.

Among the factors that most influence energy security are the source country and diplomatic relationships, availability of fuels, technical reliability, portfolio diversity, and weather patterns.¹⁵ Future shifts in competition and economic power throughout the world can influence the accessibility to oil and natural gas through the strategies and policies of particular countries (which may or may not have interests aligned with those of the US).

The world political climate has recently been characterized by increasing hostility to globalization in some parts of the world. Fragmentation of the global market through bilateral and regional trade agreements between major producers and consumers could mean rising costs and reducing market efficiencies to other regions.¹⁶ Although the needs for efficiency

¹⁴ Meyer, Sarah, "The Pentagon and Oil," Global Research, July 24, 2008
<http://www.globalresearch.ca/PrintArticle.php?articleID=9670>.

¹⁵ *Power from Perspective*, Deloitte Consulting LLP and Howard Baker Jr. Center for Public Policy, University of Tennessee, 2008, <http://bakercenter.utk.edu/main/event.php?key=142>.

¹⁶ *Facing the Hard Truths About Energy*, National Petroleum Council, July 2007,
http://downloadcenter.connectlive.com/events/npc071807/pdf-downloads/NPC-Hard_Truths-Executive_Summary.pdf.



are likely to influence international trade over time, it will not align the economic interests of major oil producing and consuming nations.

Because petroleum markets are highly integrated, any shortage of supply in any part of the world could affect the US. If supplies to relieve a domestic crisis must come from a further distance in the world or be derived from a politically unstable region, the price increases due to the shortfall would be greater and/or last longer.¹⁷

In summary, despite the recent temporary respite caused by the financial crisis, growing demand from developing nations and other emerging markets is likely to keep upward pressure on prices.¹⁸ To meet the new demands of energy in the world, critical measures must be taken including assessing future infrastructure requirements, developing human resources, stimulating technological advancements, and improving the quality of data and energy information.¹⁹

US energy security depends on reliable, sufficient energy supplies freely traded among nations. Imports from countries such as Canada and Mexico are properly regarded as safe and dependable, which enhances energy security.²⁰ **A stable environment with incremental**

¹⁷ *Energy Markets: Increasing Globalization of Petroleum Products Markets, Tightening Refining Demand and Supply Balance, and Other Trends Have Implications for US Energy Supply, Prices, and Price Volatility*, US Government Accountability Office, GAO-08-14, December 2007, <http://www.gao.gov/new.items/d0814.pdf>.

¹⁸ *Facing the Hard Truths About Energy*, National Petroleum Council, July 2007, http://downloadcenter.connectlive.com/events/npc071807/pdf-downloads/NPC-Hard_Truths-Executive_Summary.pdf.

¹⁹ *Facing the Hard Truths About Energy*, National Petroleum Council, July 2007, http://downloadcenter.connectlive.com/events/npc071807/pdf-downloads/NPC-Hard_Truths-Executive_Summary.pdf.

²⁰ *Power from Perspective*, Deloitte Consulting LLP and Howard Baker Jr. Center for Public Policy, University of Tennessee, 2008.



supplies from reliable sources leads to lower costs, thereby putting downward pressure on prices. The US economy would benefit from the investment of these cost savings in more productive directions on an ongoing basis.

Need for Infrastructure Investment

The energy transportation system includes a large network of pipelines, railways, waterways, ports, terminals, and roadways that have developed over an extended period. Currently, the system is very competitive and operates in a safe and reliable manner, playing a significant role in the transportation of energy from exploration to production and manufacturing and ultimately to the final consumption destination.²¹ However, **some aspects of the energy transportation system are nearing capacity, and future demand may be difficult to accommodate.**

Forecasts of energy supply and demand generally assume adequate transportation infrastructure will be built as it is needed with no restrictions. However, development and construction of needed transportation systems can be a slow process. Environmental, land use, and social concerns may delay and even in some cases impede the construction of new infrastructure.²² **Without timely investments, congestion through transportation systems can result in supply interruptions and other**

²¹ *Facing the Hard Truths About Energy*, National Petroleum Council, July 2007, http://downloadcenter.connectlive.com/events/npc071807/pdf-downloads/NPC-Hard_Truths-Executive_Summary.pdf.

²² *Facing the Hard Truths About Energy*, National Petroleum Council, July 2007, http://downloadcenter.connectlive.com/events/npc071807/pdf-downloads/NPC-Hard_Truths-Executive_Summary.pdf.



problems. Therefore, it is essential to allow sufficient time for implementation of new infrastructure to mitigate the risk of future issues.

Pipelines are the most cost effective means to transport crude oil and other petroleum products.²³ In 2004, an estimated 90% of petroleum products in the US were shipped either by pipeline (60%) or marine transport (30%). The rest was transported by rail (4%) and motor carriers (6%).²⁴

According to the US Government Accountability Office (GAO) analysis, **many of the crude oil and petroleum products pipelines in the country are operating near capacity.** Federal and industry agencies report there is a systematic lack of pipeline capacity in the supply infrastructure system.²⁵

A constrained supply infrastructure can be a major factor influencing prices of petroleum production during supply disruptions. Unless sufficient investments are made in the US, the supply infrastructure will become inadequate to handle the future volume of petroleum products. This situation can lead to cost increases and volatility as a result of natural disasters, political unrest in some oil producing regions, or simply

²³ *Energy Markets: Increasing Globalization of Petroleum Products Markets, Tightening Refining Demand and Supply Balance, and Other Trends Have Implications for US Energy Supply, Prices, and Price Volatility*, US Government Accountability Office, GAO-08-14, December 2007, <http://www.gao.gov/new.items/d0814.pdf>.

²⁴ *Energy Markets: Increasing Globalization of Petroleum Products Markets, Tightening Refining Demand and Supply Balance, and Other Trends Have Implications for US Energy Supply, Prices, and Price Volatility*, US Government Accountability Office, GAO-08-14, December 2007, <http://www.gao.gov/new.items/d0814.pdf>.

²⁵ *Energy Markets: Increasing Globalization of Petroleum Products Markets, Tightening Refining Demand and Supply Balance, and Other Trends Have Implications for US Energy Supply, Prices, and Price Volatility*, US Government Accountability Office, GAO-08-14, December 2007, <http://www.gao.gov/new.items/d0814.pdf>.



unexpected growth in demand because the supply infrastructure cannot support the requisite change in the delivery of fuels.²⁶

As noted, pipeline construction is a not a process which can be completed overnight. **Ensuring the availability of this critical resource is crucial to the future performance of the US economy, particularly in cases where it provides access to additional petroleum resources.**

²⁶ *Energy Markets: Increasing Globalization of Petroleum Products Markets, Tightening Refining Demand and Supply Balance, and Other Trends Have Implications for US Energy Supply, Prices, and Price Volatility*, US Government Accountability Office, GAO-08-14, December 2007, <http://www.gao.gov/new.items/d0814.pdf>.



Economic Impact of Pipeline Construction

The economic impact of the Keystone XL Project stems from two primary sources:

- the expenditures for construction and development of the pipeline and
- the market effects that ensue once the pipeline is operational.

This section of the report focuses on the first of these channels of impact: the actual spending to build the pipeline. The market effects are discussed in the following section.

Methods Used in This Analysis

The basic modeling technique employed in this study is known as dynamic input-output analysis, which essentially uses extensive survey data, industry information, and a variety of corroborative source materials to create a matrix describing the various goods and services (known as resources or inputs) required to produce one unit (a dollar's worth) of output for a given sector. Once the base information is compiled, it can be mathematically simulated to generate evaluations of the magnitude of successive rounds of activity involved in the overall production process. In this instance, the estimated costs of the pipeline and supporting facilities were provided by TransCanada and are consistent with available market information. The estimates are fully adjusted for both (1) the construction



materials likely to be acquired from foreign sources and (2) the aspects of construction within individual states which do not reflect spending in the local areas. A detailed explanation of the methods and terms used in this study, including the pertinent input-output system, may be found in Appendix A.

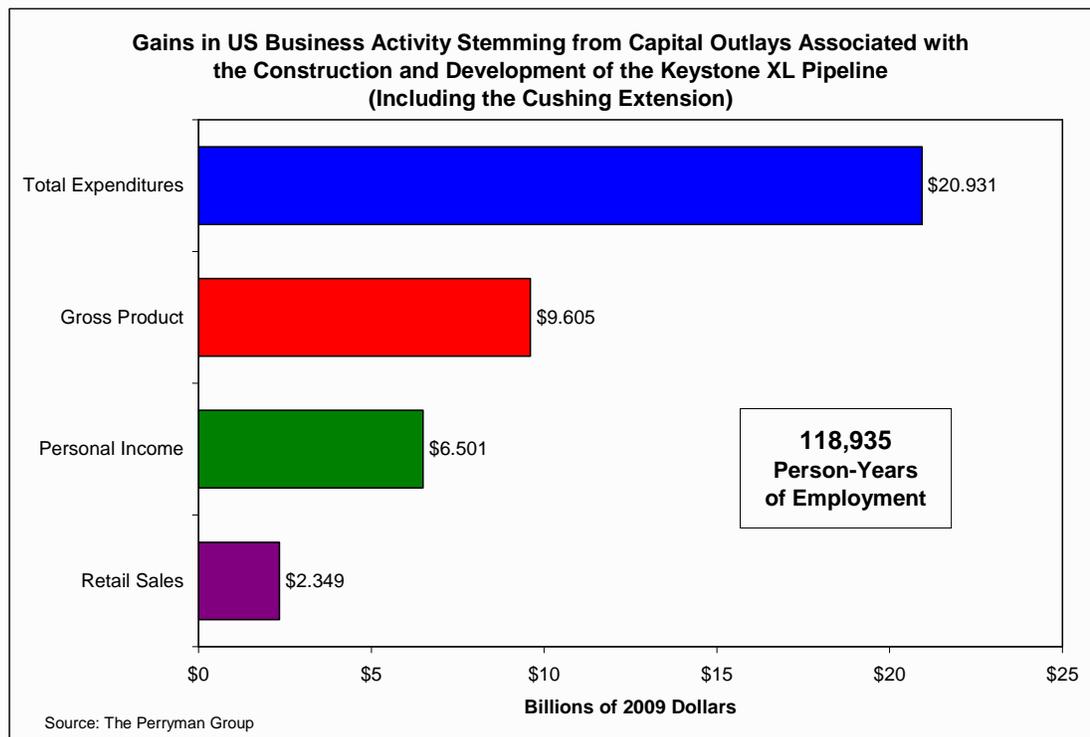
Construction and Development Impacts

As noted, an important first step in quantifying the total economic impact of the pipeline expansion project is estimation of the direct outlays. As noted, approximate mileage and costs in various areas was provided by the developer, as well as the location and costs associated with collateral infrastructure. The Perryman Group used these estimates to define the direct activity associated with the project in the US and in each state along the route, which includes direct expenditures in construction and development of the pipeline as well as the corresponding multiplier effects associated with those expenditures. The ultimate path could vary to some degree from what is contemplated at this time. To the extent changes affect the direct investment in particular areas, the economic impacts could also be influenced.

Based on these assumptions, The Perryman Group utilized the US Multi-Regional Impact Assessment System to determine the total impact of the construction and development phases on the US economy. **These effects over the life of the project were found to include \$20.931 billion in total spending, \$9.605 billion in output, and 118,935 person-years of employment.** All monetary values are given in constant (2009) dollars.



The construction and development of the Keystone XL pipeline thus provides a significant economic stimulus, including substantial job creation, to the plains states through which the pipeline will pass at a time when the economies in those states are somewhat stagnant due to the recent national economic recession.



The state-level impacts are determined by both the mileage of pipe constructed, the number of pump stations and other supporting facilities, and the ability of the affected areas to supply the types of goods and services required for the building process. The relevant submodels of the USMRIAS reflect the unique industrial structure and composition of each state. Other areas not directly on the route also benefit from the development through the provision of inputs to the construction and development phases.

The Impact of Construction and Development of the Keystone XL Pipeline on Business Activity in the US

Results by State (In Constant 2009 Dollars)

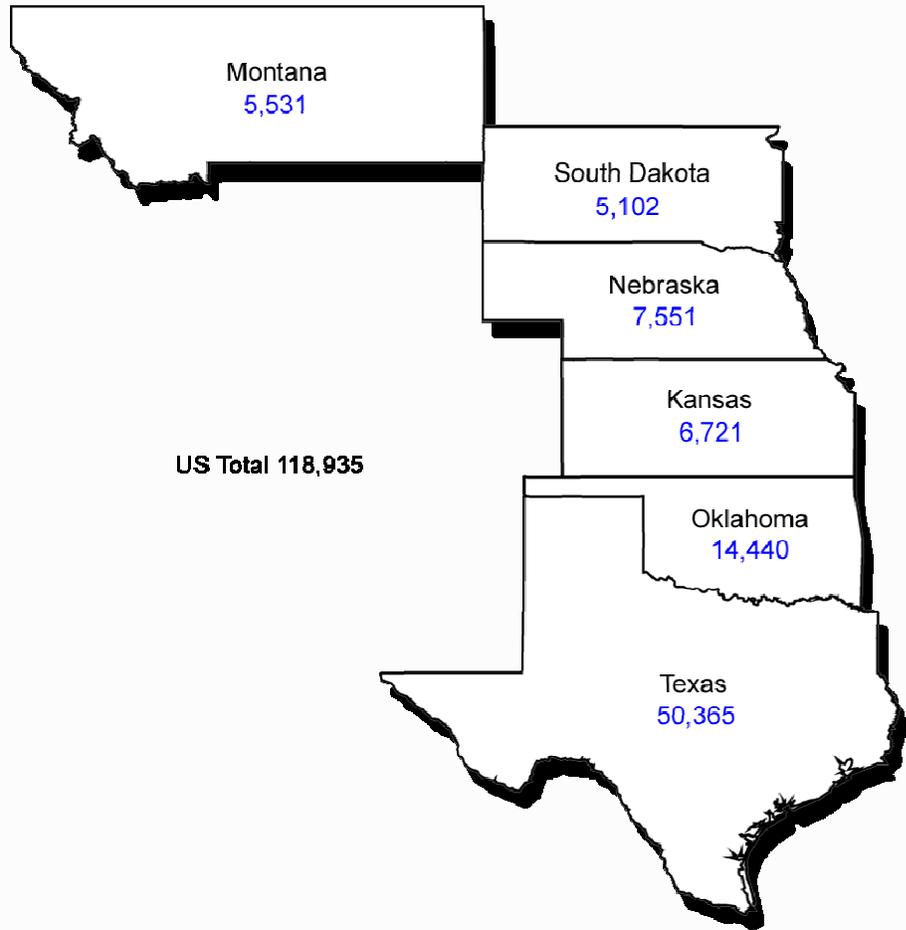
Area	Expenditures	Gross Product	Personal Income	Person-Years of Employment	Local Government Revenues During Construction	State Government Revenues During Construction*	Estimated Present Value of Cumulative Property Taxes During Operational Life*
Montana	\$421,781,495	\$349,209,504	\$286,493,336	5,531	\$1,409,594	\$7,493,025	\$2,180,035,418
South Dakota	\$470,452,678	\$389,475,130	\$319,432,745	5,102	\$1,595,679	\$8,466,415	\$685,623,827
Nebraska	\$467,918,488	\$390,354,998	\$314,522,511	7,551	\$1,814,183	\$9,483,978	\$152,282,928
Kansas	\$683,162,244	\$486,486,146	\$376,570,636	6,721	\$2,948,345	\$15,012,854	\$531,807,111
Oklahoma	\$1,224,379,199	\$1,072,117,568	\$874,286,846	14,440	\$3,959,280	\$21,292,632	\$667,967,589
Texas	\$2,320,486,782	\$1,986,265,640	\$1,616,408,490	50,365	\$7,699,250	\$41,139,517	\$1,065,223,775
Rest of US	\$15,342,458,878	\$4,931,526,907	\$2,713,265,333	29,226	\$79,668,294	\$383,470,573	N/A
US Total	\$20,930,639,765	\$9,605,435,892	\$6,500,979,897	118,935	\$99,094,625	\$486,358,994	\$5,282,940,648

*Note: Property tax calculation is an approximation reflecting estimated initial values, typical escalation in pipeline values, anticipated useful life, constant effective tax rates, and long-term discount rate reflecting current yields on 30-year US Treasury securities. Ultimate payments may vary significantly based on initial valuations, negotiations, or variations in any of the factors noted above. These calculations reflect the expectation that abatements provided for in Kansas Law during the first 10 years of operation will be available for Washington, Clay, Dickinson, Marion, Butler, and Cowley counties in Kansas. Nebraska property tax values reflect the 15-year amortization provided for in Nebraska law.

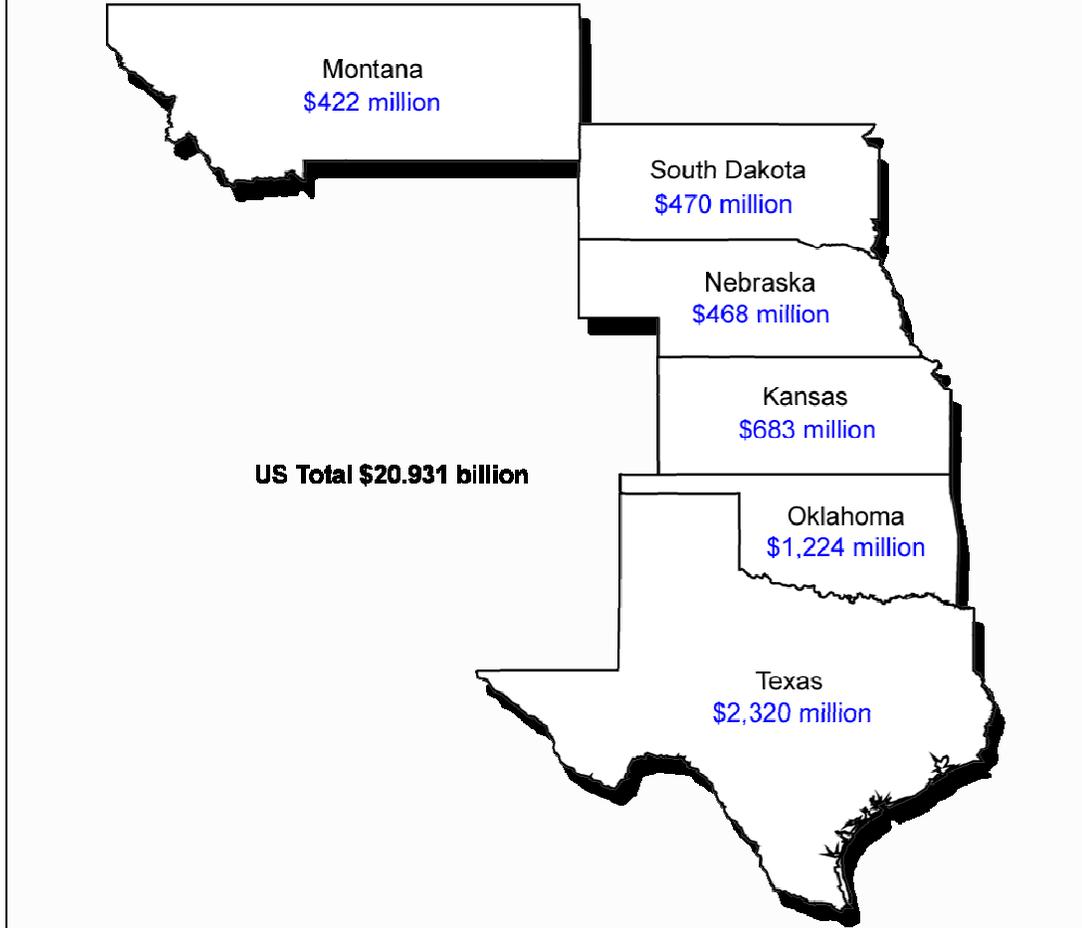
For further detail, see Appendix B.



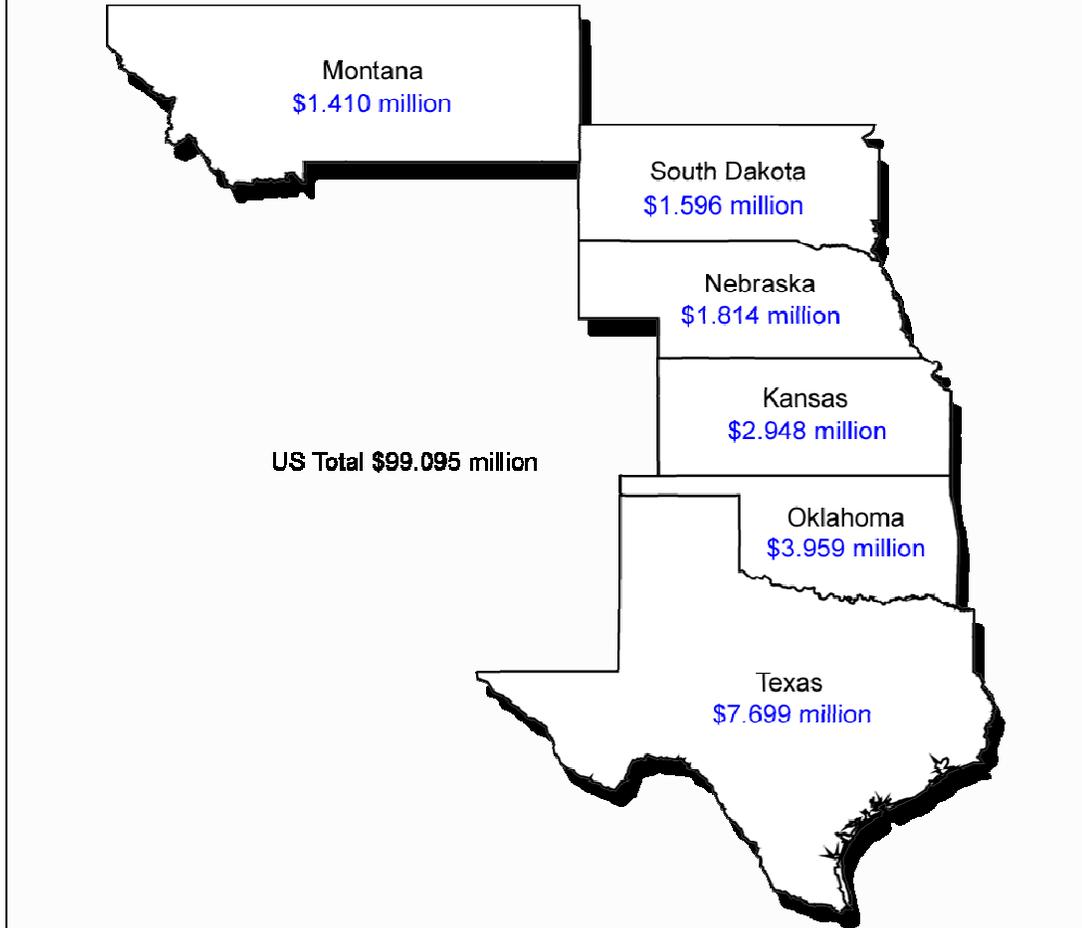
Employment Associated with Development of the Keystone XL Project (in person-years)



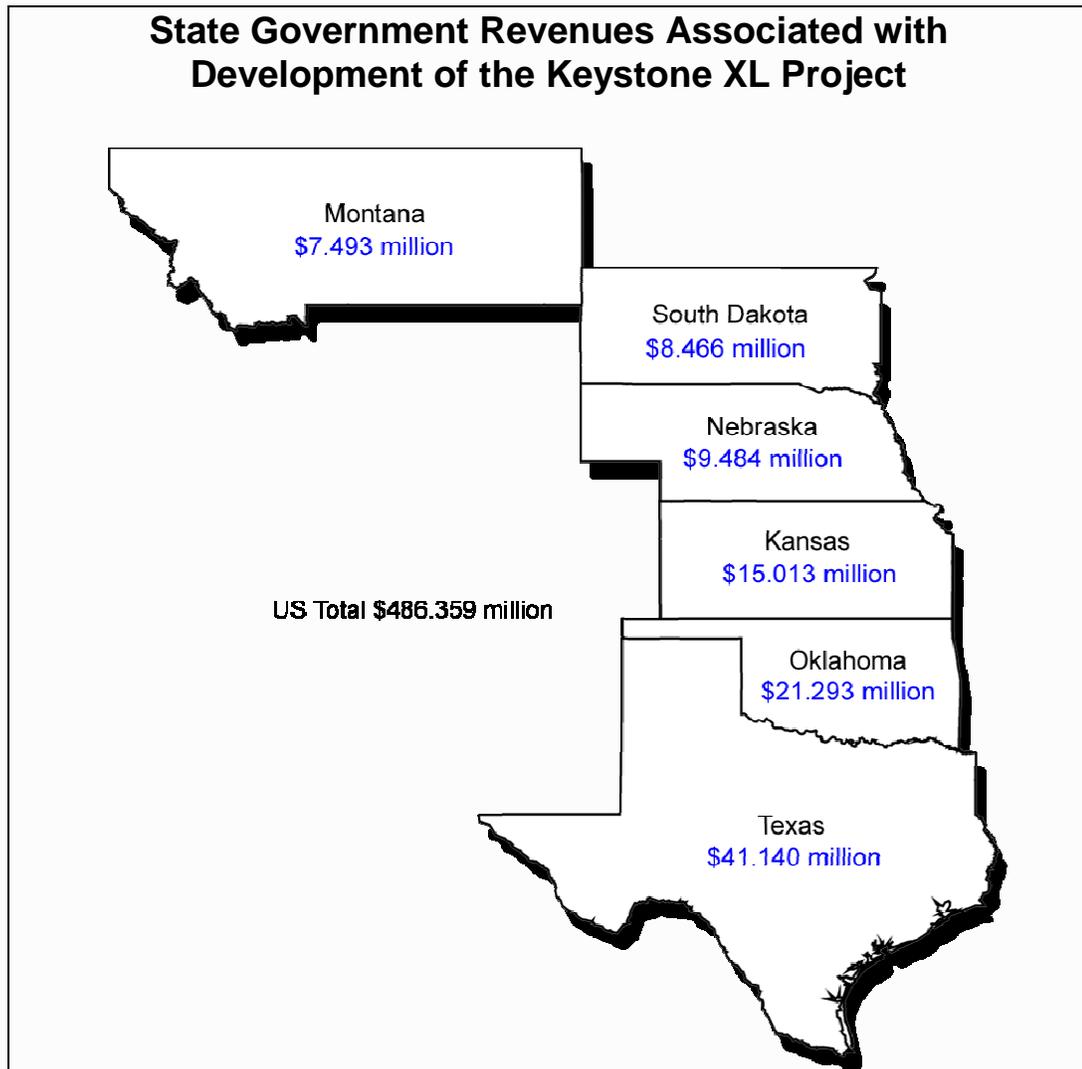
Total Expenditures (Including Spillover or Multiplier Effects) Associated with Development of the Keystone XL Project



Local Government Revenues Associated with Development of the Keystone XL Project



State Government Revenues Associated with Development of the Keystone XL Project



Impact of the Pipeline on US Energy Markets

As noted, the Keystone XL Project would lead to positive outcomes for US energy markets by providing access to a stable source of incremental petroleum supply, reduced risk and, thus, price. Furthermore, operations of the Keystone XL pipeline will provide a significant ongoing economic stimulus including the creation of hundreds of thousands of jobs due to the stable oil supplies it will make available. In order to model these effects, The Perryman Group initially examined the likely effects of such a shift by calculating the magnitude of the increase in availability (based on an 80% capacity factor for purposes of conservatism) relative to anticipated domestic consumption in the 2010-2012 timeframe. The price effect was then derived using elasticity coefficients for the US market. Because this supplemental supply represents a permanent change in the market, a long-term response parameter was adopted. This measure was obtained from academic research and independently verified for reasonableness.²⁷

The reduced cost was then allocated across the entire economy based on the requirement coefficients from the USMRIAS. This approach permits the effects to be measured over more than 500 detailed industrial sectors. This computation was tested for reasonableness by estimating the overall market effects based on annual consumption and found to be appropriate (moderately conservative).

²⁷ The estimate of the elasticity is described in Cooper, John C. B., *Price Elasticity of Demand for Crude Oil: Estimates for 23 Countries*, Organization of the Petroleum Exporting Countries, March 2003.



Because the various sectors would essentially be paying less for the same input than would be the case in the absence of the Keystone XL Project, these savings represent a net pool of funds that would be added to the production complex. The “multiplier” effects of this stimulus in activity are then simulated using the USMRIAS.

The magnitude of the impact of a permanent increase in stable oil supplies depends to some extent on prevailing prices. TPG developed two scenarios regarding crude oil costs.

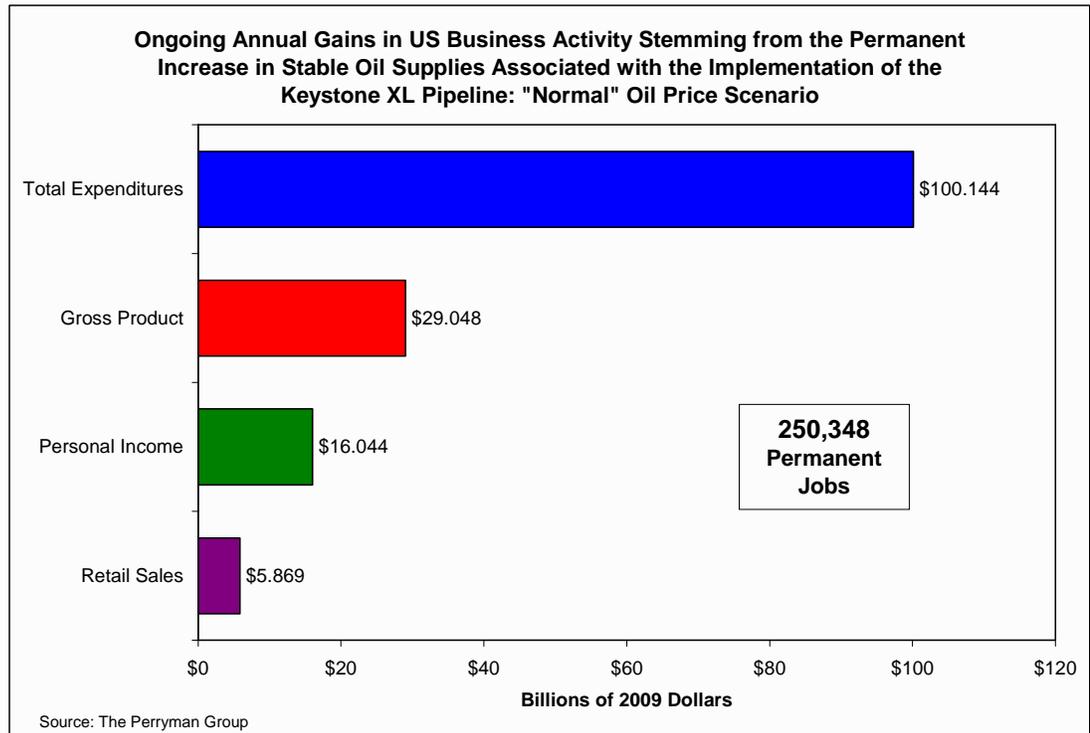
“Normal” Oil Price Scenario

In the first case, TPG assumed prices in a “normal” range represented by the 2007 average price per barrel of \$66.52. This time period was chosen because it reflects a likely level based on average prices going forward and is reasonable in light of production costs and other parameters. Although prices dropped below this threshold in the wake of major disruptions in the credit markets and a global economic contraction, this situation proved to be a temporary phenomenon. Given long-term projected patterns in international supply and demand, it is highly probable that pricing would be sustained well above those levels in the future.

Under “normal” oil price assumptions, The Perryman Group found the annual gains in US business activity stemming from a permanent increase in stable oil supplies to include \$100.144 billion in total spending, \$29.048 billion in output, and 250,348 permanent jobs.

Further detail may be found in Appendix B.





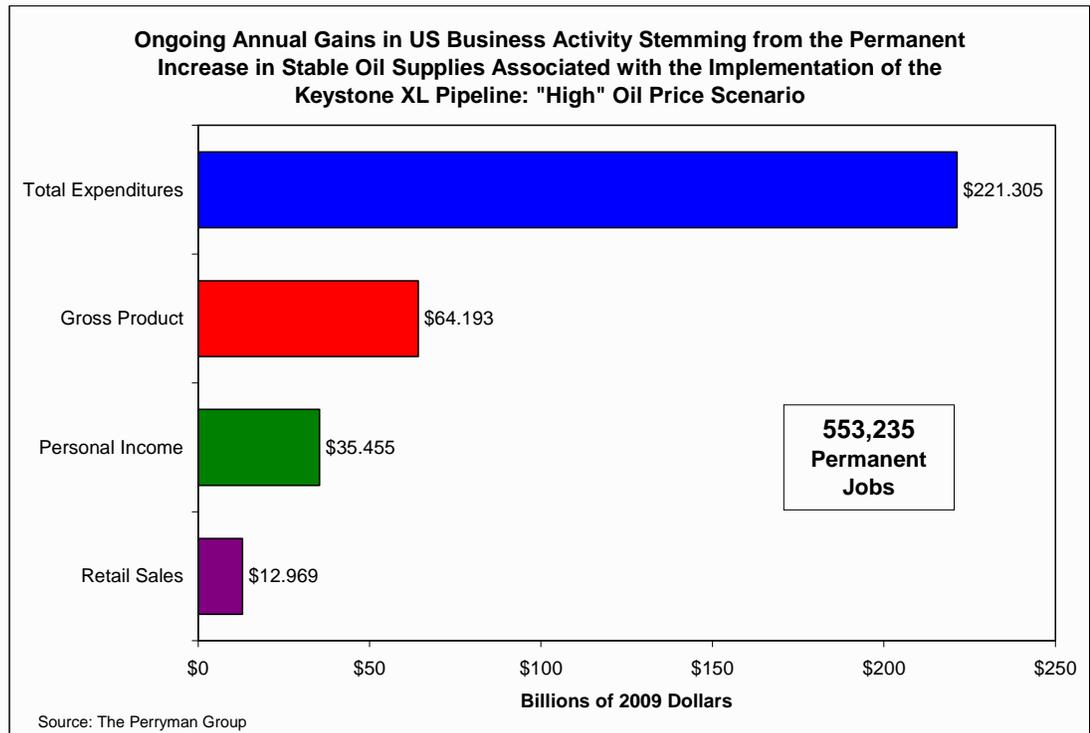
“High” Oil Price Scenario

If “high” oil prices prevail, the effect of the increase in stable oil supplies enabled by the Keystone XL Project is even more pronounced. In order to model a high oil price scenario, TPG used prices equal to the peak cost per barrel reached during the summer of 2008 of approximately \$147. This level represents a unique situation by historical standards. It should be noted, however, that many analysts anticipate that long-term prices will be well above these ranges given the likely increases in global demand, particularly in the emerging countries.

In the high-price case, The Perryman Group measured the annual impact of an increase in stable oil supplies associated with the



Keystone XL Project expansion to include \$221.305 billion in spending, \$64.193 billion in output, and 553,235 jobs.



For industry-level detail, see Appendix B. **These results clearly indicate that the US economy will enjoy notable, ongoing benefits from the development of this project.**



**Ongoing Annual Gains in US Business Activity
Stemming from the Permanent Increase in
Stable Oil Supplies Associated with the
Implementation of the Keystone XL Pipeline**
(Billions of Constant 2009 Dollars)

	“Normal” Oil Price Scenario	“High” Oil Price Scenario
Total Expenditures	\$100.144	\$221.305
Gross Product	\$29.048	\$64.193
Personal Income	\$16.044	\$35.455
Retail Sales	\$5.869	\$12.969
Permanent Jobs	250,348	553,235

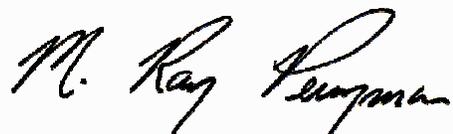


Conclusion

The proposed Keystone XL Project would generate tens of billions of dollars in economic activity in communities in the plains states through which the Keystone XL pipeline passes during its construction and development phases and across the US once the pipeline is in operation. In fact, The Perryman Group found that **building the pipeline would lead to gains in business activity of \$20.931 billion in spending, \$9.605 billion in output, and 118,935 person-years of employment.**

In addition to these substantial positive effects, the pipeline would also improve the adequacy and stability of the nation's oil supply. Once developed, the Keystone Pipeline System would allow up to 1.1 million barrels of oil per day to reach key US markets. This incremental supply from secure sources (as opposed to potentially volatile regions of the world) would work to reduce the price of crude as the risk premium is lowered and the available supply to the US market is increased. The end result would be a significant and ongoing stimulus to US business activity. Thus, **this infrastructure investment would have substantial positive outcomes both during its construction and for decades to come.**

Respectfully submitted,



The Perryman Group

M. Ray Perryman, PhD, President



APPENDICES

APPENDIX A

US Multi-Regional Impact Assessment System

Methodology

US Multi-Regional Impact Assessment System

The basic modeling technique employed in this study is known as input-output analysis. This methodology essentially uses extensive survey data, industry information, and a variety of corroborative source materials to create a matrix describing the various goods and services (known as resources or inputs) required to produce one unit (a dollar's worth) of output for a given sector. Once the base information is compiled, it can be mathematically simulated to generate evaluations of the magnitude of successive rounds of activity involved in the overall production process.

There are two essential steps in conducting an input-output analysis once the system is operational. The first major endeavor is to accurately define the levels of direct activity to be evaluated. This process was previously described. TransCanada supplied detailed information regarding numerous categories of spending that are projected to happen outside the states and counties where the construction was occurring, as well as current estimates of foreign procurement. The second step is the simulation of the input-output system to measure overall economic effects. In the case of a prospective evaluation, it is necessary to first calculate reasonable estimates of the direct activity.

Once the direct input values were determined, the present study was conducted within the context of the US Multi-Regional Impact Assessment System (USMRIAS) which was developed and is maintained by The Perryman Group. This model has been used in hundreds of diverse applications across the country and has an excellent reputation for accuracy and credibility. In addition, the model has been in operation and continually updated for 25 years. The systems used in the current



simulations reflect the unique industrial structures of the economies of the US and relevant states.

The USMRIAS is somewhat similar in format to the Input-Output Model of the United States and the Regional Input-Output Modeling System, both of which are maintained by the US Department of Commerce. The model developed by TPG, however, incorporates several important enhancements and refinements. Specifically, the expanded system includes (1) comprehensive 500-sector coverage for any county, multi-county, or urban region; (2) calculation of both total expenditures and value-added by industry and region; (3) direct estimation of expenditures for multiple basic input choices (expenditures, output, income, or employment); (4) extensive parameter localization; (5) price adjustments for real and nominal assessments by sectors and areas; (6) measurement of the induced impacts associated with payrolls and consumer spending; (7) embedded modules to estimate multi-sectoral direct spending effects; (8) estimation of retail spending activity by consumers; and (9) comprehensive linkage and integration capabilities with a wide variety of econometric, real estate, occupational, and fiscal impact models. The models used for the present investigation have been thoroughly tested for reasonableness and historical reliability.

As noted earlier, the impact assessment (input-output) process essentially estimates the amounts of all types of goods and services required to produce one unit (a dollar's worth) of a specific type of output. For purposes of illustrating the nature of the system, it is useful to think of inputs and outputs in dollar (rather than physical) terms. As an example, the construction of a new building will require specific dollar amounts of lumber, glass, concrete, hand tools, architectural services, interior design services, paint, plumbing, and numerous other elements. Each of these



suppliers must, in turn, purchase additional dollar amounts of inputs. This process continues through multiple rounds of production, thus generating subsequent increments to business activity. The initial process of building the facility is known as the *direct effect*. The ensuing transactions in the output chain constitute the *indirect effect*.

Another pattern that arises in response to any direct economic activity comes from the payroll dollars received by employees at each stage of the production cycle. As workers are compensated, they use some of their income for taxes, savings, and purchases from external markets. A substantial portion, however, is spent locally on food, clothing, healthcare services, utilities, housing, recreation, and other items. Typical purchasing patterns in the relevant areas are obtained from the *ACCRA Cost of Living Index*, a privately compiled inter-regional measure which has been widely used for several decades, and the *Consumer Expenditure Survey* of the US Department of Labor. These initial outlays by area residents generate further secondary activity as local providers acquire inputs to meet this consumer demand. These consumer spending impacts are known as the *induced effect*. The USMRIAS is designed to provide realistic, yet conservative, estimates of these phenomena.

Sources for information used in this process include the Bureau of the Census, the Bureau of Labor Statistics, the Regional Economic Information System of the US Department of Commerce, and other public and private sources. The pricing data are compiled from the US Department of Labor and the US Department of Commerce. The verification and testing procedures make use of extensive public and private sources. Note that all monetary values, unless otherwise noted, are given in constant (2009) dollars to eliminate the effects of inflation.



The USMRIAS generates estimates of the effect on several measures of business activity. The most comprehensive measure of economic activity used in this study is **Total Expenditures**. This measure incorporates every dollar that changes hands in any transaction. For example, suppose a farmer sells wheat to a miller for \$0.50; the miller then sells flour to a baker for \$0.75; the baker, in turn, sells bread to a customer for \$1.25. The Total Expenditures recorded in this instance would be \$2.50, that is, $\$0.50 + \$0.75 + \$1.25$. This measure is quite broad, but is useful in that (1) it reflects the overall interplay of all industries in the economy, and (2) some key fiscal variables such as sales taxes are linked to aggregate spending.

A second measure of business activity frequently employed in this analysis is that of **Gross Product**. This indicator represents the regional equivalent of Gross Domestic Product, the most commonly reported statistic regarding national economic performance. In other words, the Gross Product of a state or any other area is the amount of US output that is produced in that area. It is defined as the value of all final goods produced in a given region for a specific period of time. Stated differently, it captures the amount of value-added (gross area product) over intermediate goods and services at each stage of the production process, that is, it eliminates the double counting in the Total Expenditures concept. Using the example above, the Gross Product is \$1.25 (the value of the bread) rather than \$2.50. Alternatively, it may be viewed as the sum of the value-added by the farmer, \$0.50; the miller, \$0.25 ($\$0.75 - \0.50); and the baker, \$0.50 ($\$1.25 - \0.75). The total value-added is, therefore, \$1.25, which is equivalent to the final value of the bread. In many industries, the primary component of value-added is the wage and salary payments to employees.



The third gauge of economic activity used in this evaluation is **Personal Income**. As the name implies, Personal Income is simply the income received by individuals, whether in the form of wages, salaries, interest, dividends, proprietors' profits, or other sources. It may thus be viewed as the segment of overall impacts which flows directly to the citizenry.

The fourth measure, **Retail Sales**, represents the component of Total Expenditures which occurs in retail outlets (general merchandise stores, automobile dealers and service stations, building materials stores, food stores, drugstores, restaurants, and so forth). Retail Sales is a commonly used measure of consumer activity.

The final aggregates used are **Permanent Jobs and Person-Years of Employment**. The Person-Years of Employment measure reveals the full-time equivalent jobs generated by an activity. It should be noted that, unlike the dollar values described above, Permanent Jobs is a "stock" rather than a "flow." In other words, if an area produces \$1 million in output in 2007 and \$1 million in 2008, it is appropriate to say that \$2 million was achieved in the 2007-2008 period. If the same area has 100 people working in 2007 and 100 in 2008, it only has 100 Permanent Jobs. When a flow of jobs is measured, such as in a construction project or a cumulative assessment over multiple years, it is appropriate to measure employment in Person-Years (a person working for a year). This concept is distinct from Permanent Jobs, which anticipates that the relevant positions will be maintained on a continuing basis.



APPENDIX B

Detailed Sectoral Results

**Impact of the Capital Outlays Associated with the
Construction and Development of the
Keystone XL Project**

The Impact of the Capital Outlays Associated with the Construction and Development of the Keystone XL Pipeline (Including the Cushing Extension) on Business Activity in the US
Detailed Industrial Category

Category	Total Expenditures (2009 Dollars)	Gross Product (2009 Dollars)	Personal Income (2009 Dollars)	Employment (Person-Years)
Agricultural Products & Services	\$290,240,417	\$79,575,504	\$54,195,349	932
Forestry & Fishery Products	\$9,214,271	\$8,678,410	\$3,218,673	45
Coal Mining	\$37,418,274	\$10,828,865	\$11,411,087	83
Crude Petroleum & Natural Gas	\$204,149,026	\$44,331,281	\$20,445,537	108
Miscellaneous Mining	\$19,609,104	\$8,862,000	\$5,209,473	62
New Construction	\$4,981,919,645	\$2,301,511,374	\$1,896,588,717	28,790
Maintenance & Repair Construction	\$289,842,969	\$152,879,919	\$125,982,576	1,913
Food Products & Tobacco	\$1,527,917,601	\$396,513,291	\$202,557,941	3,644
Textile Mill Products	\$11,742,456	\$2,741,223	\$2,319,331	57
Apparel	\$179,776,658	\$100,101,370	\$50,722,896	1,488
Paper & Allied Products	\$97,074,087	\$42,737,773	\$19,321,434	316
Printing & Publishing	\$135,594,765	\$67,321,170	\$43,942,047	803
Chemicals & Petroleum Refining	\$934,604,953	\$144,972,921	\$68,073,203	542
Rubber & Leather Products	\$93,612,722	\$40,666,355	\$23,773,364	510
Lumber Products & Furniture	\$62,529,109	\$20,118,173	\$14,343,147	321
Stone, Clay, & Glass Products	\$169,773,315	\$84,823,315	\$44,362,950	778
Primary Metal	\$374,439,730	\$114,423,144	\$85,170,987	1,379
Fabricated Metal Products	\$928,662,210	\$363,560,860	\$234,715,363	4,327
Machinery, Except Electrical	\$100,678,659	\$41,264,921	\$29,479,828	338
Electric & Electronic Equipment	\$87,443,979	\$46,562,183	\$27,836,456	249
Motor Vehicles & Equipment	\$84,236,265	\$17,528,836	\$11,387,884	173
Transp. Equip., Exc. Motor Vehicles	\$27,580,605	\$11,434,915	\$7,472,309	96
Instruments & Related Products	\$21,528,180	\$9,408,669	\$7,151,443	99
Miscellaneous Manufacturing	\$40,096,611	\$15,576,417	\$10,743,234	183
Transportation	\$597,102,421	\$393,825,366	\$260,462,039	3,876
Communication	\$344,010,466	\$212,701,780	\$90,809,220	864
Electric, Gas, Water, Sanitary Services	\$887,841,433	\$200,181,027	\$87,353,661	398
Wholesale Trade	\$694,638,924	\$470,152,726	\$271,094,250	3,263
Retail Trade	\$1,615,263,666	\$1,338,313,415	\$800,268,628	22,582
Finance	\$257,757,019	\$139,392,991	\$81,168,945	777
Insurance	\$319,027,364	\$190,529,015	\$113,905,748	1,475
Real Estate	\$1,694,141,905	\$236,556,840	\$38,114,436	364
Hotels, Lodging Places, Amusements	\$164,140,380	\$85,650,139	\$56,189,454	1,474
Personal Services	\$329,960,949	\$202,962,979	\$157,908,483	2,864
Business Services	\$1,484,911,868	\$955,572,219	\$779,502,074	10,210
Eating & Drinking Places	\$733,847,596	\$429,902,173	\$228,730,906	11,131
Health Services	\$541,647,546	\$378,998,302	\$320,446,575	5,698
Miscellaneous Services	\$531,332,603	\$218,944,019	\$189,806,226	4,880
Households	\$25,330,013	\$25,330,013	\$24,794,027	1,845
Total	\$20,930,639,765	\$9,605,435,892	\$6,500,979,897	118,935

SOURCE: US Multi-Regional Impact Assessment System, The Perryman Group



**The Impact of the Capital Outlays Associated with the Construction and Development of the Keystone XL Pipeline on Business Activity in Montana
Detailed Industrial Category**

Category	Total Expenditures (2009 Dollars)	Gross Product (2009 Dollars)	Personal Income (2009 Dollars)	Employment (Person-Years)
Agricultural Products & Services	\$2,481,159	\$1,084,772	\$781,946	13
Forestry & Fishery Products	\$43,654	\$66,156	\$25,895	0
Coal Mining	\$197,549	\$57,059	\$60,127	2
Crude Petroleum & Natural Gas	\$1,923,180	\$650,901	\$316,901	2
Miscellaneous Mining	\$169,195	\$135,438	\$85,050	1
New Construction	\$279,216,689	\$241,349,420	\$213,306,206	3,918
Maintenance & Repair Construction	\$2,981,858	\$2,291,897	\$1,983,700	34
Food Products & Tobacco	\$6,512,876	\$2,677,895	\$1,447,056	25
Textile Mill Products	\$45,280	\$19,757	\$17,928	0
Apparel	\$1,090,689	\$986,169	\$529,736	18
Paper & Allied Products	\$898,017	\$573,975	\$272,011	6
Printing & Publishing	\$1,344,151	\$1,026,924	\$706,366	15
Chemicals & Petroleum Refining	\$5,834,825	\$1,538,221	\$768,943	5
Rubber & Leather Products	\$810,763	\$578,158	\$358,675	8
Lumber Products & Furniture	\$535,726	\$283,399	\$213,957	7
Stone, Clay, & Glass Products	\$1,533,795	\$1,377,124	\$769,446	16
Primary Metal	\$2,347,372	\$1,317,915	\$1,051,014	18
Fabricated Metal Products	\$6,003,183	\$4,289,791	\$2,965,598	70
Machinery, Except Electrical	\$771,886	\$533,433	\$405,434	5
Electric & Electronic Equipment	\$621,258	\$553,304	\$351,618	4
Motor Vehicles & Equipment	\$576,995	\$199,371	\$137,288	2
Transp. Equip., Exc. Motor Vehicles	\$167,470	\$117,395	\$81,548	1
Instruments & Related Products	\$172,585	\$125,523	\$101,462	2
Miscellaneous Manufacturing	\$344,809	\$211,377	\$154,038	3
Transportation	\$6,632,965	\$7,014,943	\$4,905,547	82
Communication	\$3,687,192	\$3,314,264	\$1,483,878	16
Electric, Gas, Water, Sanitary Services	\$8,997,505	\$2,620,892	\$1,184,381	7
Wholesale Trade	\$7,092,487	\$7,870,533	\$4,814,269	67
Retail Trade	\$19,662,035	\$21,845,067	\$13,580,407	423
Finance	\$2,479,785	\$2,103,071	\$1,294,776	15
Insurance	\$3,415,874	\$3,115,194	\$1,962,445	33
Real Estate	\$13,058,138	\$2,365,730	\$401,458	5
Hotels, Lodging Places, Amusements	\$1,738,693	\$1,323,169	\$910,173	27
Personal Services	\$4,016,818	\$3,264,720	\$2,634,170	51
Business Services	\$14,502,040	\$15,907,837	\$13,830,589	216
Eating & Drinking Places	\$7,792,470	\$6,320,811	\$3,508,738	183
Health Services	\$6,267,618	\$6,277,669	\$5,553,444	110
Miscellaneous Services	\$5,589,132	\$3,448,930	\$3,151,158	87
Households	\$223,777	\$371,301	\$385,960	31
Total	\$421,781,495	\$349,209,504	\$286,493,336	5,531

SOURCE: US Multi-Regional Impact Assessment System, The Perryman Group



**The Impact of the Capital Outlays Associated with the Construction and
Development of the Keystone XL Pipeline on Business Activity
in South Dakota
Detailed Industrial Category**

Category	Total Expenditures (2009 Dollars)	Gross Product (2009 Dollars)	Personal Income (2009 Dollars)	Employment (Person- Years)
Agricultural Products & Services	\$3,229,363	\$1,334,128	\$956,611	16
Forestry & Fishery Products	\$53,204	\$78,451	\$30,608	0
Coal Mining	\$0	\$0	\$0	0
Crude Petroleum & Natural Gas	\$2,081,648	\$711,358	\$346,657	2
Miscellaneous Mining	\$188,015	\$150,551	\$94,543	1
New Construction	\$310,397,606	\$268,267,806	\$237,096,852	3,505
Maintenance & Repair Construction	\$3,381,658	\$2,582,306	\$2,233,670	33
Food Products & Tobacco	\$8,774,350	\$3,371,852	\$1,810,427	32
Textile Mill Products	\$75,400	\$27,681	\$24,769	1
Apparel	\$1,215,636	\$1,098,150	\$589,845	17
Paper & Allied Products	\$785,720	\$544,050	\$259,886	4
Printing & Publishing	\$1,499,711	\$1,144,464	\$787,132	14
Chemicals & Petroleum Refining	\$7,873,525	\$1,920,243	\$953,556	7
Rubber & Leather Products	\$971,184	\$672,840	\$416,345	9
Lumber Products & Furniture	\$545,452	\$297,499	\$225,345	5
Stone, Clay, & Glass Products	\$1,709,060	\$1,533,249	\$856,618	15
Primary Metal	\$2,632,171	\$1,471,574	\$1,173,243	18
Fabricated Metal Products	\$6,641,309	\$4,757,936	\$3,289,821	59
Machinery, Except Electrical	\$884,648	\$603,718	\$458,375	5
Electric & Electronic Equipment	\$660,444	\$599,262	\$381,429	3
Motor Vehicles & Equipment	\$757,764	\$247,846	\$169,651	3
Transp. Equip., Exc. Motor Vehicles	\$188,216	\$131,393	\$91,237	1
Instruments & Related Products	\$191,719	\$139,500	\$112,765	2
Miscellaneous Manufacturing	\$360,327	\$225,934	\$165,003	3
Transportation	\$7,572,138	\$7,935,422	\$5,544,157	81
Communication	\$4,144,222	\$3,712,651	\$1,661,690	16
Electric, Gas, Water, Sanitary Services	\$6,921,731	\$2,222,232	\$1,014,980	5
Wholesale Trade	\$7,952,975	\$8,796,674	\$5,379,243	63
Retail Trade	\$22,384,421	\$24,722,607	\$15,359,137	427
Finance	\$2,652,327	\$2,283,035	\$1,407,435	13
Insurance	\$3,426,987	\$3,241,725	\$2,049,309	26
Real Estate	\$13,794,615	\$2,559,422	\$434,941	4
Hotels, Lodging Places, Amusements	\$1,942,845	\$1,476,309	\$1,015,362	26
Personal Services	\$4,785,522	\$3,828,645	\$3,083,471	55
Business Services	\$16,112,350	\$17,681,259	\$15,372,988	197
Eating & Drinking Places	\$9,462,199	\$7,495,420	\$4,150,033	199
Health Services	\$7,189,696	\$7,136,699	\$6,307,303	110
Miscellaneous Services	\$6,749,670	\$4,044,341	\$3,685,407	93
Households	\$262,852	\$426,893	\$442,901	32
Total	\$470,452,678	\$389,475,130	\$319,432,745	5,102

SOURCE: US Multi-Regional Impact Assessment System, The Perryman Group



**The Impact of the Capital Outlays Associated with the Construction and Development of the Keystone XL Pipeline on Business Activity in Nebraska
Detailed Industrial Category**

Category	Total Expenditures (2009 Dollars)	Gross Product (2009 Dollars)	Personal Income (2009 Dollars)	Employment (Person- Years)
Agricultural Products & Services	\$3,690,162	\$1,604,031	\$1,156,032	28
Forestry & Fishery Products	\$61,147	\$95,611	\$37,578	1
Coal Mining	\$0	\$0	\$0	0
Crude Petroleum & Natural Gas	\$2,391,303	\$846,507	\$414,022	3
Miscellaneous Mining	\$190,672	\$151,610	\$95,192	2
New Construction	\$284,016,225	\$244,161,888	\$215,791,884	4,782
Maintenance & Repair Construction	\$3,996,668	\$3,273,632	\$2,851,062	60
Food Products & Tobacco	\$9,780,546	\$3,960,676	\$2,137,944	54
Textile Mill Products	\$91,063	\$33,952	\$30,432	1
Apparel	\$1,415,213	\$1,288,773	\$692,972	32
Paper & Allied Products	\$916,233	\$659,314	\$316,187	7
Printing & Publishing	\$1,675,253	\$1,344,397	\$929,534	23
Chemicals & Petroleum Refining	\$9,142,940	\$2,246,102	\$1,116,453	14
Rubber & Leather Products	\$1,098,788	\$775,787	\$481,026	15
Lumber Products & Furniture	\$572,703	\$316,708	\$240,353	8
Stone, Clay, & Glass Products	\$1,681,039	\$1,508,974	\$843,530	22
Primary Metal	\$2,514,403	\$1,403,835	\$1,119,513	25
Fabricated Metal Products	\$6,398,757	\$4,560,507	\$3,153,298	91
Machinery, Except Electrical	\$921,826	\$643,277	\$489,493	8
Electric & Electronic Equipment	\$760,900	\$676,049	\$429,689	7
Motor Vehicles & Equipment	\$855,069	\$284,250	\$194,998	4
Transp. Equip., Exc. Motor Vehicles	\$208,267	\$147,019	\$102,233	2
Instruments & Related Products	\$216,880	\$156,833	\$126,756	3
Miscellaneous Manufacturing	\$413,255	\$263,142	\$192,524	5
Transportation	\$8,135,459	\$8,811,838	\$6,179,183	128
Communication	\$4,977,517	\$4,760,147	\$2,145,025	29
Electric, Gas, Water, Sanitary Services	\$8,788,210	\$3,060,938	\$1,409,837	9
Wholesale Trade	\$8,488,396	\$9,614,746	\$5,894,076	101
Retail Trade	\$27,171,293	\$33,725,609	\$21,218,832	801
Finance	\$3,051,938	\$2,662,854	\$1,644,076	24
Insurance	\$3,737,079	\$3,683,040	\$2,337,887	42
Real Estate	\$18,776,673	\$3,780,934	\$645,585	10
Hotels, Lodging Places, Amusements	\$2,290,685	\$1,876,151	\$1,300,515	47
Personal Services	\$5,683,235	\$5,230,979	\$4,279,561	100
Business Services	\$16,395,926	\$18,197,189	\$15,839,389	299
Eating & Drinking Places	\$11,644,394	\$10,261,671	\$5,747,036	380
Health Services	\$8,514,057	\$9,181,835	\$8,187,264	199
Miscellaneous Services	\$6,971,798	\$4,631,814	\$4,260,000	134
Households	\$282,518	\$472,378	\$491,543	51
Total	\$467,918,488	\$390,354,998	\$314,522,511	7,551

SOURCE: US Multi-Regional Impact Assessment System, The Perryman Group



**The Impact of the Capital Outlays Associated with the Construction and Development of the Keystone XL Pipeline on Business Activity in Kansas
Detailed Industrial Category**

Category	Total Expenditures (2009 Dollars)	Gross Product (2009 Dollars)	Personal Income (2009 Dollars)	Employment (Person-Years)
Agricultural Products & Services	\$7,001,903	\$2,773,199	\$2,005,708	36
Forestry & Fishery Products	\$118,518	\$157,211	\$61,845	1
Coal Mining	\$834,861	\$351,295	\$392,805	3
Crude Petroleum & Natural Gas	\$5,140,836	\$1,639,287	\$803,266	4
Miscellaneous Mining	\$570,116	\$397,837	\$249,372	3
New Construction	\$330,273,279	\$237,090,280	\$208,533,499	3,251
Maintenance & Repair Construction	\$7,416,832	\$5,632,180	\$4,924,954	77
Food Products & Tobacco	\$16,863,825	\$6,370,788	\$3,456,889	64
Textile Mill Products	\$179,492	\$61,070	\$54,905	1
Apparel	\$2,986,414	\$2,436,087	\$1,312,469	40
Paper & Allied Products	\$2,005,468	\$1,288,289	\$618,635	11
Printing & Publishing	\$3,028,756	\$2,193,024	\$1,520,282	29
Chemicals & Petroleum Refining	\$15,191,464	\$3,450,292	\$1,722,847	14
Rubber & Leather Products	\$2,000,061	\$1,267,928	\$788,153	17
Lumber Products & Furniture	\$1,669,188	\$748,166	\$567,995	13
Stone, Clay, & Glass Products	\$4,119,306	\$3,062,031	\$1,707,546	31
Primary Metal	\$6,726,977	\$3,023,885	\$2,401,159	40
Fabricated Metal Products	\$16,999,089	\$10,084,757	\$6,945,853	132
Machinery, Except Electrical	\$2,201,843	\$1,327,059	\$1,009,310	12
Electric & Electronic Equipment	\$1,898,160	\$1,477,347	\$940,400	9
Motor Vehicles & Equipment	\$1,213,772	\$376,994	\$260,344	4
Transp. Equip., Exc. Motor Vehicles	\$640,669	\$397,810	\$276,532	3
Instruments & Related Products	\$463,772	\$304,152	\$246,098	3
Miscellaneous Manufacturing	\$919,458	\$526,227	\$385,841	7
Transportation	\$13,777,059	\$13,393,791	\$9,417,573	144
Communication	\$8,752,701	\$7,802,532	\$3,533,626	35
Electric, Gas, Water, Sanitary Services	\$18,919,019	\$6,110,342	\$2,825,935	13
Wholesale Trade	\$17,241,751	\$17,211,936	\$10,558,834	131
Retail Trade	\$45,851,908	\$54,059,523	\$34,231,954	989
Finance	\$6,000,387	\$4,748,025	\$2,939,644	29
Insurance	\$7,994,467	\$6,993,166	\$4,443,725	59
Real Estate	\$40,356,309	\$7,814,411	\$1,337,074	13
Hotels, Lodging Places, Amusements	\$4,387,797	\$3,299,110	\$2,295,457	62
Personal Services	\$9,169,170	\$7,999,601	\$6,585,574	122
Business Services	\$31,975,340	\$30,460,277	\$26,468,773	356
Eating & Drinking Places	\$20,023,968	\$16,705,494	\$9,413,731	469
Health Services	\$14,843,694	\$14,943,971	\$13,396,005	244
Miscellaneous Services	\$12,810,315	\$7,632,262	\$7,025,606	185
Households	\$594,301	\$874,509	\$910,418	70
Total	\$683,162,244	\$486,486,146	\$376,570,636	6,721

SOURCE: US Multi-Regional Impact Assessment System, The Perryman Group



**The Impact of the Capital Outlays Associated with the Construction and Development of the Keystone XL Pipeline on Business Activity in Oklahoma
Detailed Industrial Category**

Category	Total Expenditures (2009 Dollars)	Gross Product (2009 Dollars)	Personal Income (2009 Dollars)	Employment (Person-Years)
Agricultural Products & Services	\$6,617,951	\$3,264,275	\$2,375,986	41
Forestry & Fishery Products	\$119,455	\$204,141	\$80,910	1
Coal Mining	\$1,058,760	\$540,236	\$607,378	4
Crude Petroleum & Natural Gas	\$6,221,437	\$2,428,476	\$1,196,761	6
Miscellaneous Mining	\$549,195	\$461,008	\$290,350	3
New Construction	\$813,239,390	\$708,522,049	\$626,229,015	9,506
Maintenance & Repair Construction	\$8,890,851	\$8,275,799	\$7,278,874	111
Food Products & Tobacco	\$15,730,846	\$7,324,345	\$3,997,945	72
Textile Mill Products	\$184,128	\$77,869	\$70,458	2
Apparel	\$3,737,466	\$3,768,668	\$2,041,941	60
Paper & Allied Products	\$1,984,900	\$1,582,888	\$765,138	13
Printing & Publishing	\$3,591,617	\$3,204,322	\$2,234,574	41
Chemicals & Petroleum Refining	\$13,466,518	\$3,811,803	\$1,915,177	15
Rubber & Leather Products	\$2,180,744	\$1,722,249	\$1,076,931	23
Lumber Products & Furniture	\$1,415,242	\$835,315	\$637,295	14
Stone, Clay, & Glass Products	\$4,776,877	\$4,447,024	\$2,491,931	44
Primary Metal	\$8,632,401	\$4,935,875	\$3,939,004	64
Fabricated Metal Products	\$20,043,559	\$14,697,943	\$10,173,435	187
Machinery, Except Electrical	\$2,429,575	\$1,819,019	\$1,390,612	16
Electric & Electronic Equipment	\$2,210,583	\$2,156,280	\$1,379,721	12
Motor Vehicles & Equipment	\$1,564,042	\$588,388	\$408,394	6
Transp. Equip., Exc. Motor Vehicles	\$753,484	\$567,823	\$396,761	5
Instruments & Related Products	\$575,734	\$459,293	\$373,607	5
Miscellaneous Manufacturing	\$1,063,784	\$747,780	\$551,357	9
Transportation	\$16,325,193	\$19,536,988	\$13,813,793	206
Communication	\$10,730,669	\$11,710,201	\$5,334,485	51
Electric, Gas, Water, Sanitary Services	\$23,295,371	\$9,162,800	\$4,262,435	19
Wholesale Trade	\$20,442,354	\$25,191,565	\$15,537,952	187
Retail Trade	\$53,856,341	\$77,263,097	\$49,218,193	1,389
Finance	\$7,095,894	\$6,934,716	\$4,317,629	41
Insurance	\$9,875,186	\$10,614,163	\$6,781,363	88
Real Estate	\$47,221,297	\$11,390,228	\$1,961,161	19
Hotels, Lodging Places, Amusements	\$5,066,696	\$4,677,349	\$3,274,413	86
Personal Services	\$10,911,193	\$11,570,427	\$9,584,708	174
Business Services	\$43,095,165	\$51,017,129	\$44,567,265	584
Eating & Drinking Places	\$22,717,262	\$23,171,730	\$13,139,963	639
Health Services	\$17,512,487	\$21,546,707	\$19,429,631	345
Miscellaneous Services	\$14,502,376	\$10,627,795	\$9,841,409	253
Households	\$693,175	\$1,259,805	\$1,318,893	98
Total	\$1,224,379,199	\$1,072,117,568	\$874,286,846	14,440

SOURCE: US Multi-Regional Impact Assessment System, The Perryman Group



**The Impact of the Capital Outlays Associated with the Construction and Development of the Keystone XL Pipeline on Business Activity in Texas
Detailed Industrial Category**

Category	Total Expenditures (2009 Dollars)	Gross Product (2009 Dollars)	Personal Income (2009 Dollars)	Employment (Person- Years)
Agricultural Products & Services	\$15,850,486	\$7,559,348	\$5,495,198	187
Forestry & Fishery Products	\$297,066	\$481,437	\$190,103	6
Coal Mining	\$265,662	\$76,733	\$80,858	15
Crude Petroleum & Natural Gas	\$11,029,474	\$4,162,451	\$2,048,508	25
Miscellaneous Mining	\$963,856	\$791,381	\$498,310	12
New Construction	\$1,515,366,452	\$1,293,576,541	\$1,143,271,459	31,554
Maintenance & Repair Construction	\$16,952,358	\$15,319,517	\$13,460,797	417
Food Products & Tobacco	\$39,262,367	\$17,916,053	\$9,777,628	294
Textile Mill Products	\$404,589	\$163,616	\$147,733	9
Apparel	\$6,501,133	\$6,333,399	\$3,427,013	239
Paper & Allied Products	\$4,343,074	\$3,294,931	\$1,588,418	64
Printing & Publishing	\$7,434,062	\$6,446,872	\$4,491,715	165
Chemicals & Petroleum Refining	\$37,904,374	\$10,402,199	\$5,221,368	77
Rubber & Leather Products	\$4,899,469	\$3,747,656	\$2,340,873	104
Lumber Products & Furniture	\$2,796,792	\$1,606,329	\$1,224,624	54
Stone, Clay, & Glass Products	\$8,738,771	\$7,958,834	\$4,458,820	154
Primary Metal	\$13,581,531	\$7,594,004	\$6,059,292	240
Fabricated Metal Products	\$34,227,418	\$24,546,937	\$16,987,574	723
Machinery, Except Electrical	\$4,495,036	\$3,283,208	\$2,508,792	59
Electric & Electronic Equipment	\$3,587,608	\$3,378,972	\$2,159,275	49
Motor Vehicles & Equipment	\$3,368,232	\$1,253,739	\$870,852	21
Transp. Equip., Exc. Motor Vehicles	\$1,037,430	\$756,908	\$528,220	18
Instruments & Related Products	\$1,014,813	\$783,783	\$636,918	20
Miscellaneous Manufacturing	\$1,882,684	\$1,284,078	\$945,811	36
Transportation	\$35,832,463	\$42,031,793	\$29,714,579	788
Communication	\$20,546,173	\$21,807,566	\$9,925,371	190
Electric, Gas, Water, Sanitary Services	\$38,341,054	\$14,493,233	\$6,728,741	71
Wholesale Trade	\$39,792,326	\$47,864,199	\$29,508,520	714
Retail Trade	\$106,533,911	\$148,916,172	\$94,784,685	5,102
Finance	\$13,460,224	\$12,796,143	\$7,961,116	160
Insurance	\$17,394,877	\$18,234,145	\$11,642,942	317
Real Estate	\$84,579,031	\$18,824,493	\$3,231,529	83
Hotels, Lodging Places, Amusements	\$9,884,579	\$8,827,766	\$6,171,437	338
Personal Services	\$22,287,894	\$23,035,038	\$19,065,739	647
Business Services	\$81,439,259	\$94,228,130	\$82,293,525	2,238
Eating & Drinking Places	\$46,240,194	\$45,699,596	\$25,881,440	2,482
Health Services	\$34,743,717	\$41,645,360	\$37,523,685	1,293
Miscellaneous Services	\$31,865,951	\$22,775,719	\$21,078,712	1,008
Households	\$1,340,392	\$2,367,359	\$2,476,309	392
Total	\$2,320,486,782	\$1,986,265,640	\$1,616,408,490	50,365

SOURCE: US Multi-Regional Impact Assessment System, The Perryman Group



The "Spillover" Impact of the Capital Outlays Associated with the Construction and Development of the Keystone XL Pipeline on Business Activity in States Other Than Montana, South Dakota, Nebraska, Kansas, Oklahoma, and Texas
Detailed Industrial Category

Category	Total Expenditures (2009 Dollars)	Gross Product (2009 Dollars)	Personal Income (2009 Dollars)	Employment (Person-Years)
Agricultural Products & Services	\$251,369,393	\$61,955,751	\$41,423,868	612
Forestry & Fishery Products	\$8,521,228	\$7,595,403	\$2,791,735	35
Coal Mining	\$35,061,443	\$9,803,542	\$10,269,920	59
Crude Petroleum & Natural Gas	\$175,361,149	\$33,892,301	\$15,319,421	66
Miscellaneous Mining	\$16,978,054	\$6,774,175	\$3,896,655	40
New Construction	\$1,449,410,005	(\$691,456,611)	(\$747,640,197)	-27,726
Maintenance & Repair Construction	\$246,222,744	\$115,504,587	\$93,249,518	1,180
Food Products & Tobacco	\$1,430,992,790	\$354,891,682	\$179,930,051	3,104
Textile Mill Products	\$10,762,503	\$2,357,278	\$1,973,107	44
Apparel	\$162,830,107	\$84,190,123	\$42,128,920	1,083
Paper & Allied Products	\$86,140,675	\$34,794,326	\$15,501,160	211
Printing & Publishing	\$117,021,217	\$51,961,168	\$33,272,444	516
Chemicals & Petroleum Refining	\$845,191,308	\$121,604,060	\$56,374,859	409
Rubber & Leather Products	\$81,651,714	\$31,901,736	\$18,311,362	334
Lumber Products & Furniture	\$54,994,005	\$16,030,757	\$11,233,578	221
Stone, Clay, & Glass Products	\$147,214,468	\$64,936,079	\$33,235,060	498
Primary Metal	\$338,004,874	\$94,676,057	\$69,427,763	973
Fabricated Metal Products	\$838,348,895	\$300,622,989	\$191,199,783	3,065
Machinery, Except Electrical	\$88,973,844	\$33,055,207	\$23,217,812	233
Electric & Electronic Equipment	\$77,705,025	\$37,720,969	\$22,194,323	165
Motor Vehicles & Equipment	\$75,900,391	\$14,578,247	\$9,346,358	134
Transp. Equip., Exc. Motor Vehicles	\$24,585,069	\$9,316,568	\$5,995,778	66
Instruments & Related Products	\$18,892,676	\$7,439,584	\$5,553,836	64
Miscellaneous Manufacturing	\$35,112,294	\$12,317,880	\$8,348,660	120
Transportation	\$508,827,143	\$295,100,593	\$190,887,206	2,446
Communication	\$291,171,993	\$159,594,418	\$66,725,145	529
Electric, Gas, Water, Sanitary Services	\$782,578,544	\$162,510,590	\$69,927,352	274
Wholesale Trade	\$593,628,635	\$353,603,073	\$199,401,355	2,000
Retail Trade	\$1,339,803,756	\$977,781,340	\$571,875,420	13,451
Finance	\$223,016,463	\$107,865,146	\$61,604,268	494
Insurance	\$273,182,893	\$144,647,581	\$84,688,077	911
Real Estate	\$1,476,355,842	\$189,821,621	\$30,102,689	231
Hotels, Lodging Places, Amusements	\$138,829,085	\$64,170,286	\$41,222,097	888
Personal Services	\$273,107,117	\$148,033,569	\$112,675,260	1,714
Business Services	\$1,281,391,788	\$728,080,397	\$581,129,544	6,320
Eating & Drinking Places	\$615,967,110	\$320,247,452	\$166,889,965	6,778
Health Services	\$452,576,278	\$278,266,061	\$230,049,243	3,396
Miscellaneous Services	\$452,843,361	\$165,783,158	\$140,763,934	3,119
Households	\$21,932,998	\$19,557,767	\$18,768,004	1,170
Total	\$15,342,458,878	\$4,931,526,907	\$2,713,265,333	29,226

SOURCE: US Multi-Regional Impact Assessment System, The Perryman Group



**Annual Impact of the Permanent Increase in
Stable Oil Supplies Associated with the
Implementation of the Keystone XL Project**



**The Annual Impact of the Permanent Increase in Stable Oil Supplies Associated
with the Implementation of the Keystone XL Pipeline on Business Activity
in the US—"Normal" Oil Price Scenario (2007 Average Price Per Barrel)
Detailed Industrial Category**

Category	Total Expenditures (2009 Dollars)	Gross Product (2009 Dollars)	Personal Income (2009 Dollars)	Employment (Person-Years)
Agricultural Products & Services	\$871,502,755	\$240,904,038	\$164,069,030	2,812
Forestry & Fishery Products	\$36,059,933	\$31,312,029	\$11,613,122	158
Coal Mining	\$133,396,803	\$38,042,666	\$40,088,100	285
Crude Petroleum & Natural Gas	\$26,797,308,259	\$5,873,899,892	\$2,709,035,534	14,305
Miscellaneous Mining	\$85,796,261	\$34,133,710	\$20,065,264	235
New Construction	\$113,025,806	\$49,462,427	\$40,760,124	620
Maintenance & Repair Construction	\$2,671,756,757	\$1,441,899,535	\$1,188,214,996	18,028
Food Products & Tobacco	\$4,149,444,287	\$1,060,962,539	\$541,990,457	9,735
Textile Mill Products	\$34,563,112	\$10,652,024	\$9,012,523	214
Apparel	\$434,203,497	\$238,732,288	\$120,969,298	3,539
Paper & Allied Products	\$326,104,831	\$148,780,244	\$67,262,469	1,092
Printing & Publishing	\$427,626,360	\$215,064,990	\$140,377,797	2,559
Chemicals & Petroleum Refining	\$23,477,515,185	\$2,682,759,051	\$1,259,711,197	10,020
Rubber & Leather Products	\$293,926,114	\$124,769,184	\$72,939,491	1,556
Lumber Products & Furniture	\$152,231,309	\$50,895,627	\$36,285,806	804
Stone, Clay, & Glass Products	\$252,646,924	\$127,801,457	\$66,840,688	1,164
Primary Metal	\$411,402,263	\$118,791,026	\$88,422,229	1,423
Fabricated Metal Products	\$739,205,771	\$272,533,518	\$175,947,904	3,236
Machinery, Except Electrical	\$575,146,323	\$242,033,748	\$172,909,934	1,975
Electric & Electronic Equipment	\$240,579,941	\$132,036,798	\$78,936,061	700
Motor Vehicles & Equipment	\$255,615,372	\$58,705,473	\$38,138,864	567
Transp. Equip., Exc. Motor Vehicles	\$83,261,849	\$37,314,189	\$24,383,472	305
Instruments & Related Products	\$54,949,271	\$23,983,784	\$18,229,831	243
Miscellaneous Manufacturing	\$111,111,950	\$42,567,789	\$29,359,528	490
Transportation	\$2,113,623,929	\$1,235,568,025	\$817,160,585	12,151
Communication	\$926,649,927	\$572,253,257	\$244,313,250	2,320
Electric, Gas, Water, Sanitary Services	\$12,400,866,794	\$2,303,447,504	\$1,005,163,021	4,572
Wholesale Trade	\$1,798,545,400	\$1,215,578,202	\$700,913,183	8,435
Retail Trade	\$3,889,965,340	\$3,224,098,595	\$1,927,907,825	54,397
Finance	\$837,389,123	\$468,518,626	\$272,819,783	2,603
Insurance	\$823,120,267	\$495,945,298	\$296,495,619	3,834
Real Estate	\$6,812,775,239	\$1,691,840,575	\$272,592,195	2,597
Hotels, Lodging Places, Amusements	\$407,342,946	\$211,536,482	\$138,775,267	3,629
Personal Services	\$790,850,039	\$487,053,347	\$378,935,369	6,868
Business Services	\$1,918,313,418	\$1,139,157,569	\$929,260,694	12,167
Eating & Drinking Places	\$1,978,696,376	\$1,158,823,735	\$616,556,093	30,000
Health Services	\$1,336,488,764	\$933,377,333	\$789,179,196	14,027
Miscellaneous Services	\$1,321,367,437	\$553,288,367	\$479,654,940	12,328
Households	\$59,881,670	\$59,881,670	\$58,614,568	4,356
Total	\$100,144,257,606	\$29,048,406,609	\$16,043,905,309	250,348

SOURCE: US Multi-Regional Impact Assessment System, The Perryman Group



**The Annual Impact of the Permanent Increase in Stable Oil Supplies Associated
with the Implementation of the Keystone XL Pipeline on Business Activity
in the US—"High" Oil Price Scenario (2008 Summer Peak Price Per Barrel)
Detailed Industrial Category**

Category	Total Expenditures (2009 Dollars)	Gross Product (2009 Dollars)	Personal Income (2009 Dollars)	Employment (Person-Years)
Agricultural Products & Services	\$1,925,900,555	\$532,364,605	\$362,569,864	6,213
Forestry & Fishery Products	\$79,687,466	\$69,195,255	\$25,663,393	350
Coal Mining	\$294,788,485	\$84,069,030	\$88,589,157	630
Crude Petroleum & Natural Gas	\$59,218,345,071	\$12,980,506,375	\$5,986,593,860	31,613
Miscellaneous Mining	\$189,597,870	\$75,430,778	\$44,341,458	518
New Construction	\$249,771,399	\$109,305,122	\$90,074,238	1,369
Maintenance & Repair Construction	\$5,904,212,918	\$3,186,398,551	\$2,625,790,807	39,840
Food Products & Tobacco	\$9,169,697,987	\$2,344,580,475	\$1,197,723,951	21,513
Textile Mill Products	\$76,379,698	\$23,539,500	\$19,916,429	473
Apparel	\$959,529,677	\$527,565,339	\$267,325,417	7,821
Paper & Allied Products	\$720,646,575	\$328,783,763	\$148,640,754	2,413
Printing & Publishing	\$944,995,112	\$475,263,884	\$310,215,516	5,654
Chemicals & Petroleum Refining	\$51,882,061,519	\$5,928,526,466	\$2,783,787,521	22,142
Rubber & Leather Products	\$649,536,061	\$275,722,640	\$161,186,188	3,440
Lumber Products & Furniture	\$336,410,139	\$112,472,296	\$80,186,613	1,776
Stone, Clay, & Glass Products	\$558,314,760	\$282,423,544	\$147,708,676	2,573
Primary Metal	\$909,142,102	\$262,511,738	\$195,400,897	3,144
Fabricated Metal Products	\$1,633,542,518	\$602,261,383	\$388,820,534	7,151
Machinery, Except Electrical	\$1,270,993,829	\$534,861,109	\$382,107,039	4,365
Electric & Electronic Equipment	\$531,648,396	\$291,783,061	\$174,437,777	1,546
Motor Vehicles & Equipment	\$564,874,620	\$129,730,976	\$84,281,616	1,253
Transp. Equip., Exc. Motor Vehicles	\$183,997,171	\$82,459,196	\$53,884,101	674
Instruments & Related Products	\$121,430,290	\$53,000,846	\$40,285,405	538
Miscellaneous Manufacturing	\$245,542,042	\$94,068,926	\$64,880,497	1,082
Transportation	\$4,670,816,560	\$2,730,434,450	\$1,805,811,877	26,852
Communication	\$2,047,768,180	\$1,264,600,554	\$539,898,493	5,126
Electric, Gas, Water, Sanitary Services	\$27,404,200,523	\$5,090,300,406	\$2,221,271,258	10,103
Wholesale Trade	\$3,974,536,588	\$2,686,259,706	\$1,548,921,194	18,640
Retail Trade	\$8,596,285,403	\$7,124,811,988	\$4,260,409,656	120,211
Finance	\$1,850,514,147	\$1,035,361,365	\$602,893,989	5,752
Insurance	\$1,818,981,950	\$1,095,970,518	\$655,214,310	8,472
Real Estate	\$15,055,291,043	\$3,738,733,682	\$602,391,050	5,739
Hotels, Lodging Places, Amusements	\$900,171,573	\$467,466,370	\$306,674,147	8,021
Personal Services	\$1,747,669,209	\$1,076,320,534	\$837,394,757	15,177
Business Services	\$4,239,207,343	\$2,517,380,678	\$2,053,537,612	26,888
Eating & Drinking Places	\$4,372,645,329	\$2,560,840,184	\$1,362,503,694	66,297
Health Services	\$2,953,455,327	\$2,062,634,817	\$1,743,976,877	30,998
Miscellaneous Services	\$2,920,039,284	\$1,222,690,768	\$1,059,971,079	27,243
Households	\$132,330,209	\$132,330,209	\$129,530,089	9,625
Total	\$221,304,958,930	\$64,192,961,088	\$35,454,811,793	553,235

SOURCE: US Multi-Regional Impact Assessment System, The Perryman Group

