ND PSC Case No. PU-07-596

8-inch Crude Oil Loop Pipeline, McKenzie County

Pipeline Corridor Application

September 2007

Belle Fourche

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SECTION A DESCRIPTION OF PROPOSED FACILITY

A.1 Describe the type of transmission facility addressed in this application. The description shall include the purpose of the facility and the technology to be employed:

Belle Fourche Pipeline Company proposes to construct and operate a new 32-mile-long, 8-inch liquid petroleum pipeline that will interconnect with Belle Fourche facilities at Alexander Station and Bowline Junction, both in North Dakota. The new section of pipeline parallels the existing 6-inch line from Bowline Junction to Enbridge's Alexander Station and will be operationally integrated into the existing operations of Belle Fourche.

New right-of-way has been acquired from landowners adjacent to the west side of the existing Belle Fourche 50 foot right-of-way for its existing 6-inch pipeline. The pipeline will be buried underground. No new pumping facilities will be needed at this time within North Dakota. Also, no new surface facilities will be installed in the State of North Dakota, other than pipeline markers, rectifiers, and block valves. Some small fenced-in enclosures to house associated power and control systems may be installed to allow some valves to be operated remotely.

The estimated cost of the Project is approximately $10.2 million.

A.2 Describe the type, source, and final destination of the product to be transmitted by the proposed facility:

The new pipeline capacity will provide needed capacity to transport increased production of petroleum from Bowman County, North Dakota and Fallon and Richland Counties in Montana where nominal daily production has tripled in the last three years. This additional pipeline will increase the capacity of the system from 10,000 barrels per day to approximately 30,000 barrels per day on an annual average. This product is subsequently transported via Enbridge's North Dakota Pipeline for ultimate delivery to crude pipeline interconnected facilities near Clearbrook, Minnesota.

To accommodate the producers and shippers, on January 1, 2006, Belle Fourche reversed the Baker to Alexander line to deliver crude oil to Enbridge at Alexander. The movement from Baker to Alexander has consistently been either at capacity or near capacity since that time. Belle Fourche has made incremental improvements to increase the flow rate of the line, including adding Drag Reducing Agent and increasing the operating pressure of the 6-inch line into Alexander. These incremental improvements were not enough to satisfy the needs of the producer and shipping community. As a result, Belle Fourche conducted an "Open Season" for 20,000 barrels per day of firm space. The Open Season commenced during the middle of June where producers and shipper were given the opportunity to commit volumes for a three year term. The Open Season concluded during the first week of July and all of the space offered by Belle Fourche has been committed by six different shippers.

Although Belle Fourche does not explicitly specify the type of crude it will transport; historically it is a sweet common stream system and will continue to accept sweet crude oil into its common stream. Belle Fourche does not have any plans to accept any other crude other than sweet crude from Baker, Montana.

Installation of an 8-inch parallel line to the existing Bowline to Alexander pipeline section in Belle Fourche Pipeline's North Dakota network will add additional pipeline capacity on its system. The total crude petroleum throughput increase is expected to be proportionately higher than the energy usage (actual kilowatts per hour) increase.

However, the key energy economic impact will be the substitution of the most energy efficient mode of crude oil transportation, e.g. pipeline for the least efficient mode of transportation, e.g. on-road transport via cargo tanker truck. Installing this new segment will open 20,000 barrels per day of capacity from an existing system which will be used to move crude oil from the Baker, Montana and Bowman, North Dakota areas to the Belle Fourche Alexander, North Dakota shipping point. This additional capacity represents approximately 95 cargo tanker trucks traveling 270 miles round trip each on each day. Trucks have been moving crude oil to the Alexander pipeline station from these areas to access the higher value markets at the Clearbrook, Minnesota interconnect facilities rather than the Guernsey, Wyoming interconnected pipeline facilities.

Beyond the direct energy benefit of using a more efficient mode of transportation, energy conservation is a major concern at Belle Fourche Pipeline Company. Energy/power costs represent the largest single recurring expense in pipeline operation. Attention is continually being directed toward energy conservation. Belle Fourche Pipeline Company's energy conservation goal is to minimize power/energy unit costs, through the implementation of internal programs directed at continuous improvement of energy utilization efficiency.

Generally, liquid pipelines are designed at a specified capacity for a known liquid. Most liquid pipelines transport a variety of different liquids. The change in fluid characteristics (density, viscosity, etc.) of the transported liquids will affect the capacity of the pipeline. Liquids are also batched in a pipeline generally in a repeatable sequence. Both fluid characteristics and batch sequence will affect the capacity of the pipeline.

Two definitions are used to describe pipeline capacity; Design Capacity and Annual Capacity.

- Design Capacity is the theoretical capacity of the pipeline for a given types of liquids and their batch sequence. Design Capacity is calculated assuming theoretically ideal operating conditions.

- Annual Capacity is the average sustainable throughput rate over a year. Annual Capacity is calculated assuming historic average annual and operating conditions. These operating conditions include scheduled and unscheduled maintenance, normal operating problems and crude supply rateability. Annual Capacity of a pipeline is typically 90% of Design Capacity.

The design data pertinent to the proposed new 8-inch pipeline is presented below in Table 1.1 – Corridor Certificate, Capacity Definitions.

Table 1.1 – Corridor Certificate Capacity Definitions		
8-inch Crude Oil Loop Pipeline Project Capacities (bpd)		
Ultimate Capacity	Maximum economic expansion capacity of individual line. Requires additional pumping horsepower over current design to meet this capacity	28,000
Design Capacity	Theoretical capacity	22,200
Annual Capacity	Average sustainable rate over a year	20,000
Operating Factor	Historical percentage of full system utilization	90%

A.3 PIPELINE SIZE AND DESIGN: provide a description of the size and design of the PIPELINE facility including, but not limited to, the following:

a. Width of right-of-way;
b. Estimated distance between surface structures such as manholes or block valves;
c. Pipe size;
d. Approximate length of facility;
e. Maximum design operating pressure and temperature;
f. Maximum design flow rate; and
g. The number and general location of compressor or pumping stations

A.3 (a) Width of the Right of Way

Construction work space will be approximately 66 feet wide to allow adequate room for topsoil separation, work equipment and pipe stringing. Additional temporary work space may be necessary during construction in areas such as steep slopes and staging areas for streams, wetlands, and road crossings, for safety reasons, to provide an area for prefabrication of a section of pipeline, or for storage of top soil and subsoil material. Belle Fourche also has access to the adjacent 50 feet of right-of-way to the east from its existing line right-of-way.

In most cases, the Alexander 8-inch Crude Oil Loop Pipeline will be installed 25 feet west of the existing pipeline. The distance has been established based on the following criteria:

- Provision of adequate space and line separation for future line maintenance, and
- Allowance of adequate space to facilitate construction of the 8-inch pipeline while minimizing potential damage to the existing lines.

A.3 (b) Estimated Distances Between Surface Structures

One block valve will be installed approximately one mile south of Alexander, ND. Other surface structures will be limited to pipeline markers and rectifier sites, which are part of the cathodic protection system.

A.3 (c) Pipe Size

The pipe to be installed will have a nominal 8-inch outside diameter, 0.188 wall ×52 pipeline pipe. The maximum allowable operating pressure will be 1200 psig.

The valves to be installed will be 8-inch ANSI 600, weld end by weld end, full port, rising stem gate valves. These valves will be manufactured in accordance with API Standard 6D "API Specification for Steel, Gate, Plug, Ball and Check Valves for Pipeline Service". The maximum allowable operating pressure of the valve will be 1440 pounds of pressure per square inch gauge (“psig”).

A.3 (d) Approximate Length of Facility

The Alexander 8-inch Crude Oil Loop Pipeline Project is expected to install approximately 165,300 feet of pipe, or approximately 31.3 miles of pipe.

A.3 (e) Maximum Design Operating Pressure and Temperature

The initial Annual Capacity of the Project will be 20,000 bpd. The maximum allowable operating pressure of this pipe will be 1200 psig. The maximum temperature of the petroleum will be 104^{o}F.

A.3 (f) Maximum Design Flow Rate

The design flow rate of the Project is 22,200 bpd.

A.3 (g) The Number and General Location of Pumping Stations

No new pumping stations or units will be required within North Dakota at this time.

A.4 TIME SCHEDULE

In order to minimize price discounts during the upcoming season, which benefits all owners of interests in the production and the State of North Dakota through production and extraction revenues, Belle Fourche has assured its customers that the upgraded system would be operational by late 2007 or early 2008. In order to accomplish this, Belle Fourche needs to begin construction at the earliest possible date.

A.4 (a) Certificate of Corridor Compatibility

Corridor permit application is being submitted in September 2007 as part of this consolidated Certificate of Corridor Compatibility and Route Application. Approval is expected on or before October 31, 2007.

A.4.(b) Route Application

Route application is being submitted in September 2007 as part of this consolidated Certificate of Corridor Compatibility and Route Application. Approval is expected on or before October 31, 2007.

A.4 (c) Route Permit

Expected on or before October 31, 2007.

A.4 (d). Construction Start Date

Proposed commencement date for construction is November 1, 2007

A.4 (e) Construction Complete

Estimated construction completion date is on or before February 1, 2008.

A.4 (f) In Service Date

Estimated in service date is on or before March 1, 2008

SECTION B STUDIES

Contacts have been made with the North Dakota Game and Fish Department (NDGFD), the Dakota Prairie Grasslands (DPG), Little Missouri National Grasslands (LMNG), McKenzie County Ranger District, the U.S. Fish and Wildlife Service (FWS), as well as the North Dakota Parks and Recreation Department's North Dakota Natural Heritage Inventory System to identify species and ecologically significant habitats within the right-of-way and the Project corridor. Possible areas of concern discussed were federally listed endangered, threatened, candidate, sensitive, or watch species, state-listed protected species, and critical habitat that is located on or within the pipeline route.

A field survey was conducted in August 2007 of the proposed corridor including the areas ½ mile on either side of the proposed routing (1 mile total corridor width). No sensitive wildlife or botany issues were identified within the corridor. The results of this field study are presented in Tab 3 Section B.2.j in the route permit application submitted as part of this consolidated permit application.

The NDGFD was provided with the proposed route and is currently under review. Areas that will be analyzed by the department will be state-listed protected species or unique biological areas with the proposed route.

The LMNG, McKenzie County Ranger District's Wildlife Biologist and Botanist were both informed of the Project route. Botany concerns that arose were potentially occurring habitat for the establishment of sensitive species. Wildlife concerns that arose were potentially occurring golden eagle nests and lek areas within the surrounding vicinity of the Project area. Preliminary discussions with the McKenzie Ranger District concluded that there are no current sensitive species populations within the Project area. Lek areas potentially impacted by work in the proposed corridor are not a concern due to Project construction occurring past the time restriction requirements. Land use is restricted within 0.5 miles of golden eagle nesting areas.

The Project area is located on land that has previously been reclaimed and invasive species have established in the majority of the area. The establishment of new populations of sensitive species is highly unlikely in areas that have been infested with invasive plants. Golden eagle nests that exist within the area are out of the Project corridor and the minimum distance required by the Forest Service. Therefore, construction activity will not affect reproductive success or habitat loss. Recommendations were also made to minimize environmental effects of water bodies and wetland crossings.

The U.S. Fish and Wildlife Service discussed federally listed endangered, threatened, and candidate species in North Dakota. Recommendations were made to avoid areas where prairie dog colonies occur and to take consideration of the candidate specie, the Dakota skipper. The endangered black footed ferret occupies prairie dog colonies and avoidance is required to prevent habitat loss. The FWS also recommended that consideration be taken in the event a Dakota skipper is identified in the Project area. However, the Dakota skipper's field duration will be expired prior to the commencement of construction operations.

The North Dakota Natural Heritage Inventory System listed Species of Concern in the state that have been identified within the Project area (see Tab 3 Section B.2.j). The field study

concluded that the Project area is within safe distance from the species listed and will not have an effect on the species or there habitat.

Beaver Creek Archaeology of Linton, North Dakota was engaged to review existing site file data maintained by the State Historical Society of North Dakota, State Historic Preservation Office (SHPO) to determine if any portion of the pipeline route was surveyed previously for cultural resources. Topographic maps and aerial photography were reviewed to determine the amount of pedestrian survey as advised by the NDSHPO State Archaeologist. Unplowed regions, landforms such as prominent hills, terraces, and any other water related landform were surveyed. After determining the areas for inventory, the proposed corridor was inventoried by walking parallel pedestrian transects 20 meters apart across the Area of Potential Effect (APE).

One site new site (Site Number TBA by SHSND) was located during the course of the Cultural Resource Inventory. This site consisted of a foundation/basement feature with a historic cultural material scatter. Debitage has been and is currently being discarded and burned within the feature. Items in the debitage included wire, glass, metal, wood, and plastic. The items in the feature have been deposited in recent times, less than 50 years. A historic materials scatter is situated on top of the hill to the south which is associated to the feature. This scatter contained remnants of a 1920s automobile, a horse drawn binder and wagon and other miscellaneous items for agricultural machinery associated with the early twentieth century. Based upon criteria for National Register of Historic Places (NRHP) listing, the site was found ineligible. Re-routing the pipeline around this area, therefore, would not be expected to be required.

SECTION C NEED FOR FACILITY

C.1 Describe the need for the facility based on current and projected demand for the product transmitted for the facility including the most recent system studies supporting the analysis of the need.

a. Planned Use and Purpose

To accommodate the producers and shippers, on January 1, 2006, Belle Fourche reversed the Baker to Alexander line to deliver crude oil to Enbridge at Alexander. The movement from Baker to Alexander has consistently been either at capacity or near capacity since that time. Belle Fourche has made incremental improvements to increase the flow rate of the line, including adding Drag Reducing Agent and increasing the operating pressure of the 6 inch line into Alexander. These incremental improvements were not enough to satisfy the needs of the producer and shipping community. As a result, Belle Fourche conducted an "Open Season" for 20,000 barrels per day of firm space. The Open Season commenced during the middle of June where producers and shipper were given the opportunity to commit volumes for a three year term. The Open Season concluded during the first week of July and all of the space offered by Belle Fourche has been committed by six different shippers.

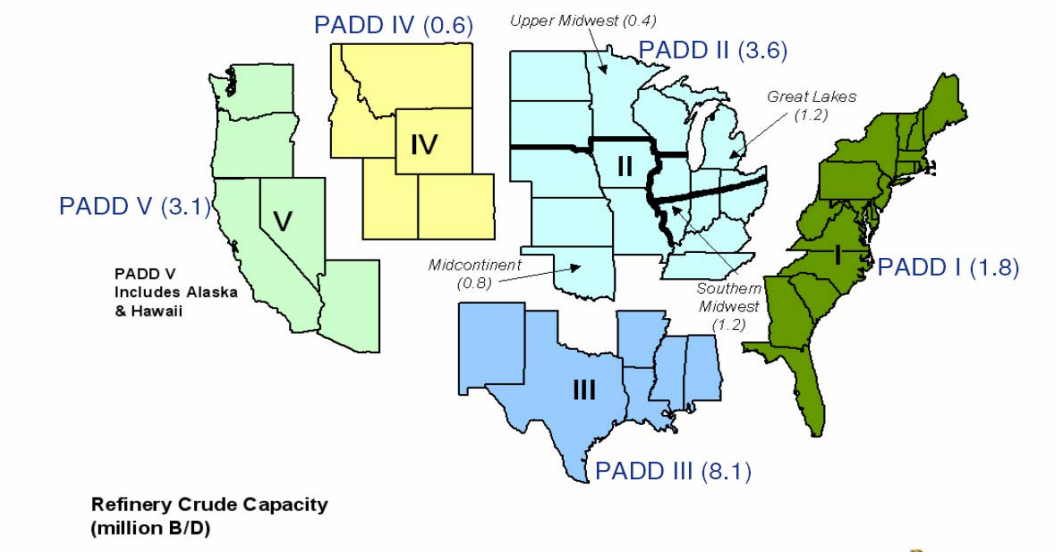
The Alexander 8-inch Crude Oil Pipeline Project will deliver crude oil into the Enbridge North Dakota Pipeline facilities for subsequent delivery at the Clearbrook crude interconnection hub. Crude oil delivered to this point can be transported via various pipelines for delivery throughout the Midwest refinery markets.

b. Petroleum Supply and Demand in Midwest:

The petroleum-using public in the U.S. Midwest consumes over 5.2 million bpd of refined petroleum products, (according to the most recent statistics available from the U.S. Energy Information Administration ("EIA"), a statistical arm of the Department of Energy), which include gasoline, jet fuel, asphalt, heating fuel and petrochemical products produced from crude oil. To meet this demand, refineries in PADD II processed 3.3 million bpd of crude oil in 2005. Major Upper Midwest refineries located in Minnesota, Wisconsin, Illinois, northern Indiana, Michigan, and Ohio are currently served directly or indirectly by Enbridge's North Dakota Pipeline System. A significant portion of the total refined petroleum products consumed in the Midwest is refined within the Midwest. The other major supply region for refined petroleum products into the Midwest are refineries located primarily in the Gulf Coast Region. Refined product "imports" into the Midwest from this region averaged 1.17 million bpd according to EIA.
Demand for petroleum products as an energy source and for other purposes is growing and will continue to grow throughout the Midwest area as population grows and economic activity expands, despite energy conservation, use of alternative fuels and efficiency measures. EIA's Annual Energy Outlook projects that U.S. oil consumption
will increase by one-third to approximately 27.6 million bpd by 2030.1 Satisfying this demand requires importation of crude oil into the Midwest, as production in PADD II (see map of Petroleum Area Defense Districts as defined by the U.S. Department of Energy

in Figure 1.C.1 below) has fallen to approximately 0.44 million bpd, compared to a high of over 1 million bpd in the mid-1980's.2

Figure 1.C.1
US Petroleum Administration for Defense District (PADD) Map



Historically, a significant portion of the crude petroleum required to satisfy the public demand for refined products has been sourced from crude oil production areas in various western Canadian provinces and has been transported to the U.S. Midwest through common carrier pipelines such as the Enbridge North Dakota Pipeline System.

Recently, BP announced its intention to significantly expand its heavy crude oil processing capability[3] and expand its refined crude oil output by up to 15 percent at its Whiting, Indiana refinery serving the region, contingent on increased pipeline capacity from western Canadian supply sources being available. As well, Midwestern refineries are moving to increase the use of Canadian crude overall; e.g., Flint Hills Resources in Minnesota. The Marathon refinery in Detroit is planning to add 65,000 bpd of heavy crude capacity to increase its production of transportation fuels and the Sunoco refinery in Toledo is increasing its capacity by approximately one-third to increase its utilization of Canadian crude.

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1 U.S. Department of Energy, EIA "Annual Energy Outlook 2007 with Projections to 2030", Report #:DOE/EIA-0383(2007)

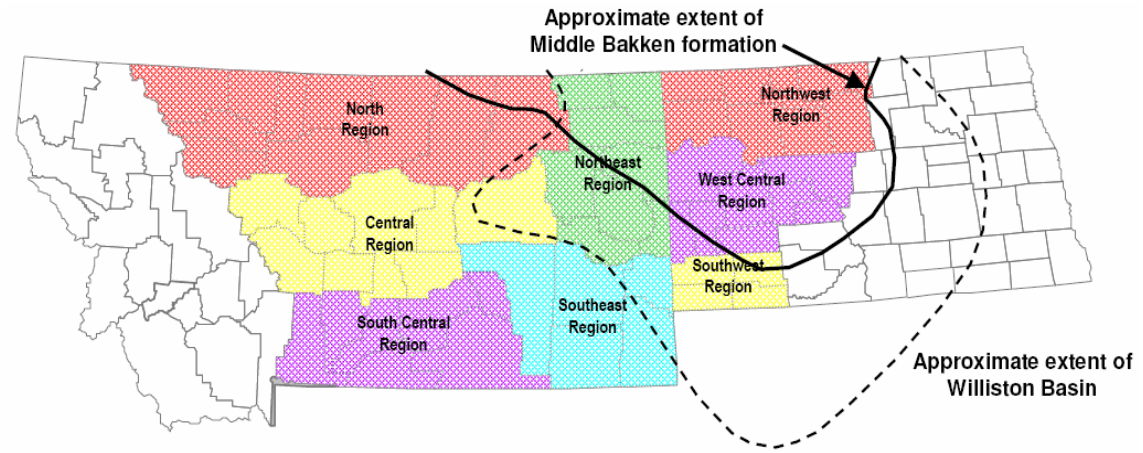
2 U.S. Department of Energy, Energy Information Administration (EIA)

3 BP News Release September 26, 2006

c. Area crude supply is increasing and has not yet peaked:

The crude oil production in the Williston Basin can be segregated by the location of the production facilities. A commonly used basis is presented in Figure 1.C.2

Figure 1.C.2
Williston Basin Crude Production Regions



From the ND Oil & Gas Research Council's March 2007 study, the outlook for North Dakota is presented in Figure 1.C.3 and the forecast for Montana is Figure 1.C.4.

Figure 1.C.3
North Dakota Oil Production Outlook Reported in Barrels per Day

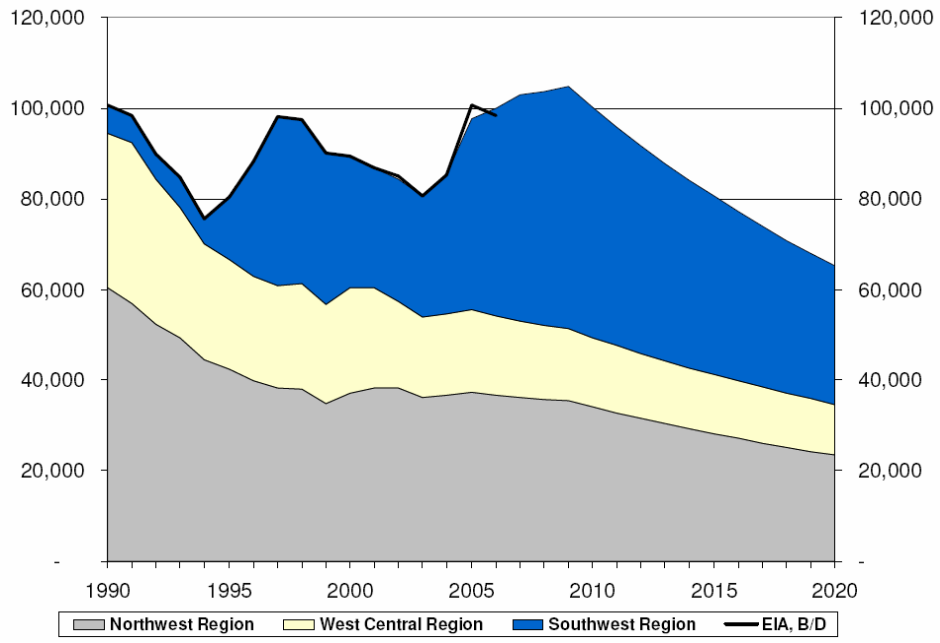
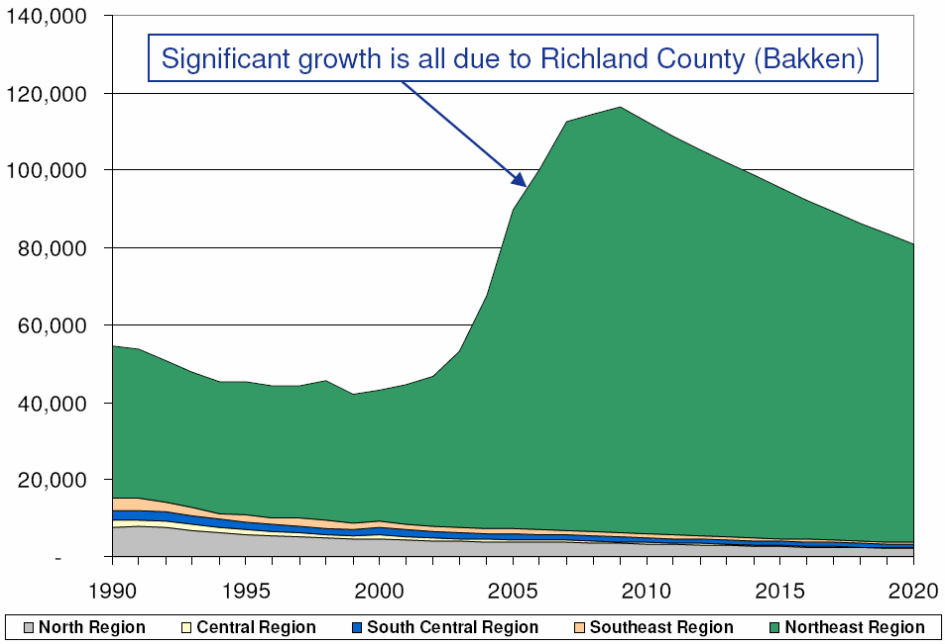


Figure 1.C.4
Montana Oil Production Outlook Reported in Barrels per Day



North Dakota's crude oil production is not expected to peak until the year 2010, driven by the surge in volume from the southwest region in the state. Montana's production is also expected to continue to grow and peak in 2010.

d. Pipeline capacity is constrained in western North Dakota:

Crude oil produced in North Dakota is shipped to one of three outlets or demand points; (1) Tesoro's Mandan, ND refinery; (2) Guernsey WY interconnection hub; and/or (3) Clearbrook, MN interconnection hub. The crude oil pipeline network servicing the Williston Basin crude oil production fields is presented as Figure 1.C.5

Crude oil into the Guernsey WY interconnection hub has suffered depressed prices relative to value at the Clearbrook, MN interconnection hub since mid-2005. A historical trend of prices is presented as Figure 1.C.6. Canadian crude oil, specifically the expanded production of West Canadian Syncrude (WCS), has filled available pipeline capacity to the midwest and mid-continent (Kansas, Nebraska, Oklahoma) refiners. Recent refinery disruptions have aggravated the situation and caused downward spikes in crude price. Seasonal (i.e. winter) slack decreases demand depresses its value, albeit temporarily, over the winter non-driving season months. Other capacity constraints on pipelines serving the northern and southern exits from Rocky Mountains

The "geographical market risk" of limited transportation options suffered by oil producers in southwest North Dakota caused millions of dollars per year in loss revenue. Without unconstrained export capacity, local production lacks access to alternative markets making it vulnerable to regional price swings.

Figure 1.C.5
Williston Basin Crude Oil Liquid Transportation Network Map

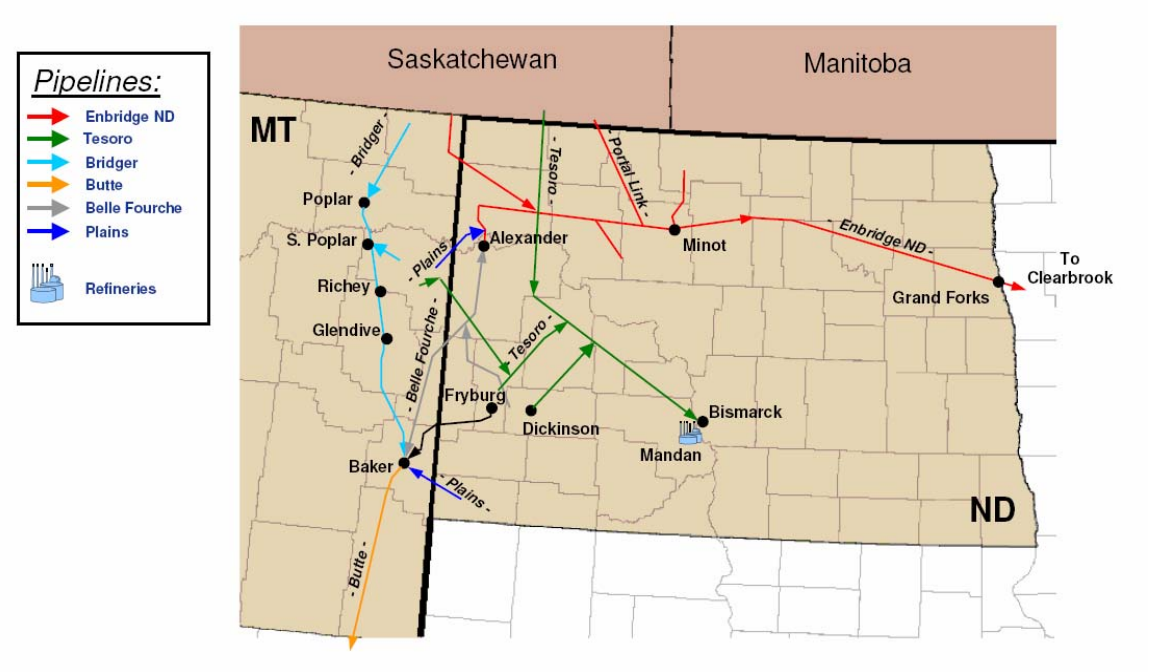
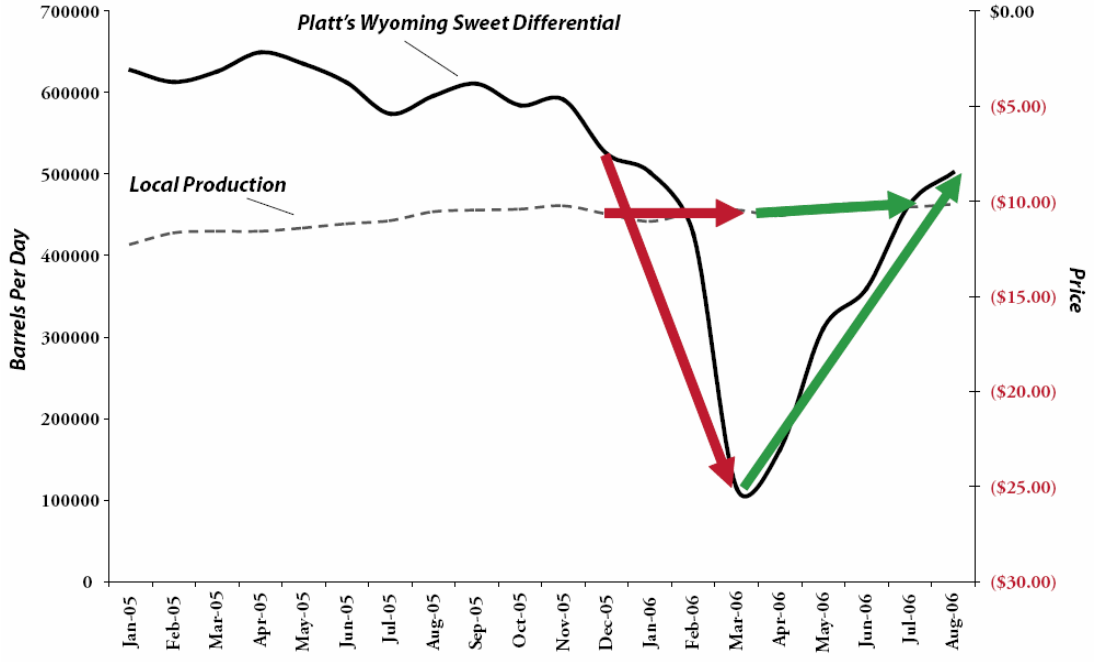


Figure 1.C.6
Crude Price Discounts at Guernsey Hub vs Area Production



e. Applicant's project increases capacity in western North Dakota:

The Alexander 8-inch Crude Oil Pipeline Project will deliver an additional 20,000 barrels per day average to Enbridge's North Dakota Pipeline, at Clearbrook and for subsequent delivery to non-affiliated connecting carrier, Minnesota Pipe Line, at Clearbrook or for reentry into the Lakehead System for delivery into Midwest refinery markets.

This project is one of many steps necessary by the pipeline transportation industry to realign the supply patterns of the crude oil producing community and maximize capacity for transportation to consumer centers. A number of alternatives to the Alexander 8-inch Crude Oil Pipeline Project were considered, as discussed in Section C.2; however, a dedicated pipeline over a conservative distance was the most effective and efficient solution for resolving bottleneck between Bowline Junction and Alexander.

f. Advantages to U.S. Refinery Sector and U.S. Public:

Increased western North Dakota and Eastern Montana oil supply is critical to realizing the significant economic and strategic benefits that will accrue to growing U.S. refinery demand and ultimately to the residential and industrial refined products' consumer. Domestic U.S. onshore production of crude oil, particularly in the onshore U.S. Gulf states, has been declining and will continue to decline, as is evident from the annual crude oil production forecasts distributed by the Energy Information Administration. Domestically produced crude affords Midwest refiners and consumers a supply source that is reliable, ample, secure, and economical.

Gathering and transmission pipelines, such as those operated by Belle Fourche, are the only practical and secure means of meeting the Midwest's need for petroleum. No combination of railroad tank cars and/or tanker trucks could effectively and economically move the huge quantities of crude oil needed to keep the Midwest refineries functioning.

Eliminating the existing crude price discount will encourage oil producers to consider additional domestic exploration, keeping revenue and jobs in the United States rather than exploring beyond US boundaries. Domestic crude supply is the most reliable and secure. Ultimately consumers benefit as a balanced crude supplies network secure product availability, maintain the Midwest refining industry and its economic contributions to the area, and may act to cushion the Midwest market against supply disruptions caused by natural phenomena and consequences of world oil shocks.

g. Other Expansions on the Belle Fourche System:

No additional Belle Fourche expansions are planned at this time, however market forces may open the economics of other alternatives considered. As predominately a gathering and transfer system, much of the Belle Fourche transportation flexibility is subject to changes by larger pipeline transportation companies. As the Enbridge system expands, more opportunities may present themselves.

Belle Fourche Pipeline continues to support effort of the Interstate Oil and Gas Compact Commission (IOGCC) to identify issues and resolve them quickly.

h. Summary:

Belle Fourche currently operates a pipeline running from Baker, Montana to a connection point with Enbridge Pipelines (North Dakota) LLC just north of Alexander, North Dakota. The Belle Fourche pipeline network was previously designed to transport crude oil from locations in western North Dakota to the Butte Pipeline at Baker, Montana for further delivery to Guernsey, Wyoming. As a consequence, the northern portions of the pipeline are smaller diameter than the southern portions. The line from Baker to Belle Fourche's Bicentennial station is a 10-inch pipe. The line from Bicentennial to Bowline field is an 8-inch pipe. The line from Bowline Junction to Alexander is a 6-inch pipe. This line segment is the constraint and currently restricts the volume of crude that producers wish to ship north. Over the past several years, a substantial increase in production from oil fields in Bowman County, North Dakota and Fallon County, Montana, combined with increased volumes of crude oil available from other sources, including Canada, has resulted in an oversupply of crude oil at the Guernsey market, which in turn has resulted in significant price discounts for crude oil delivered to Guernsey. As a result, producers in Bowman and Fallon Counties have been desirous of shipping as much oil as possible to Enbridge for delivery to Clearbrook, Minnesota and interconnected points south of this point.

C.2 Alternatives to the Proposed Facility

The Applicant has considered alternatives to the Project within the context of the need to de-bottleneck and increase long-term, reliable pipeline capacity. Two broad alternatives exist to rectify the situation (1) install/expand capacity to move crude oil barrels out of the Guernsey hub interconnected market to other demand centers such as Salt Lake City or Cushing Oklahoma; or (2) divert crude oil barrels away from the Guernsey hub and provide alternative access to other markets. This Project employs the second strategy.

The existing Belle Fourche 6-inch crude pipeline was reversed in January 2006 to remove 10,000 barrels per day from the Guernsey hub and redirect it to Clearbrook, Minnesota as additional capacity has become available on Enbridge's North Dakota Pipeline System. As Enbridge continues into Phase 6 of its expansion projects to increase crude outlets into Minnesota and points south, capacity will become available to move additional barrels from the southwestern corner of North Dakota and southeastern Montana into this market

A rational and defensible de-bottleneck alternative analysis involves consideration of environmental, engineering and economic factors in a multi-disciplinary and iterative fashion. The following alternatives to the 8-inch Crude Oil Loop Pipeline Project were considered:

a. No Action Alternative:

The status quo could be allowed to continue, supported by a limited trucking alternative into Enbridge at their Alexander station. Western Canadian Syncrude (WCS) has flooded the Guernsey market (Billings, Cheyenne, Denver) and driven crude prices down $10-15 below Clearbrook hub price. At the proposed 20,000 barrels per day capacity

and assuming only a 90% operating factor paired with an average $12 per barrel price differential represents a loss of over $75 million annually to oil producers and other stakeholders. This price differential already has prompted some producers to consider or actually shut in their production wells until the supply and demand balance is restored. The impact on the attractiveness of exploring for oil in the region, while difficult to quantify, also must not be dismissed. A “no action” alternative is unacceptable to Belle Fourche and its customers.

b. Trucking Alternative:

While this alternative is currently occurring on a limited basis in order to access higher value markets, there is not sufficient tanker trailer truck capacity to transport 20,000 bpd. Moreover, the trucking alternative significantly overburdens current public road capacity. Additionally, should the truck capacity issue be resolved, Belle Fourche or its shippers would need to expand truck loading/unloading facilities at suitable locations to allow receipt into the Enbridge Mainline System. While trucks are a vital part of the crude gathering and distribution network, pipelines are a safer and more economical alternative for transporting this volume of crude oil over these distances. The potential in-service date of additional trucking, road and off-loading capacity is not known. The reliability of this alternative in northern climates is compromised by periodic restriction in truck traffic due to winter storms and spring road restrictions or other weather related or capacity availability restrictions. On-road transportation safety is especially a concern during winter time icy road conditions. As this alternative is therefore considered infeasible, the costs and economic life for this alternative have not been estimated.

c. Rail Alternative:

Currently there is no sufficient rail tanker car capacity nor loading facilities to transport 20,000 bpd to Clearbrook, then allow continued transport at Clearbrook to Minnesota refineries or east of Clearbrook to other Midwest refineries. The rail tanker car alternative would require the construction (by Belle Fourche or its shippers) of rail car loading and off-loading facilities, and potentially the construction of new rail lines that pose additional risk and impact to landowners and the public. While rail tanker cars are a vital part of the distribution network for refined products, pipelines are a safer and more economical crude oil alternative. The potential in-service date of additional truck-to-rail, rail tanker car, rail line, and off-loading capacity is not known. The reliability of this alternative in northern climates is compromised by periodic weather restrictions, potential for derailments and labor issues. As this alternative is therefore considered infeasible, the costs and economic life for this alternative have not been estimated.

d. Pipeline System Alternatives:

Five other alternatives to provide shippers access to markets away from the oversupplied Guernsey hub interconnection were considered and include:

- Reversing the Little Missouri segment to deliver crude into the Tesoro Crude Pipeline. This alternative was rejected because this demand point consists of only one consumer (Tesoro), their demand is relatively small and limited by their opportunities to redistribute refined product, in addition to their existing access to captive and long term contracts for their crude supply.
- Reversing the Bridger Poplar Pipeline which runs along the eastern portion of Montana. Three variations of this alternative was considered (a) using existing connection in to Enbridge; (b) installing 75 miles of new pipeline into a point beyond the next Enbridge segment bottleneck and (c) complete reversal with connections into the Wascana US/Canada border crossing to push crude volume north into the Regina area. All three alternatives were rejected based on one or more of the following factors (1) extensive permitting time required further delaying addition of needed capacity; (2) higher capital investment; (3) requires an even larger impact to the environment due to the additional length of the right-of-way; (4) significantly higher market risk; and (5) it would remove away net capacity serving other area shippers.
- Utilize the existing right of way and replace the existing 6-inch line with a new10-inch pipeline. This alternative was rejected due to (1) higher capital investment; (2) longer construction time required; (3) discarding functional assets.

TransCanada Keystone Pipeline, LLC (“Keystone”) is proposing the construction of a new, 1833-mile pipeline from Alberta, through North Dakota, South Dakota and on to Patoka, Illinois. The Keystone Pipeline is not an alternative system as it does not connect to the western North Dakota and eastern Montana crude production fields.

e. Alternative Belle Fourche Pipeline Route:

A full route alternative analysis was completed by Belle Fourche. Belle Fourche identified and evaluated several options for routing its Project. These studies were designed to define a preferred route that achieves Project objectives, technologically and economically feasible to construct, and minimizes impacts on landowners and the environment. Based on this assessment Belle Fourche focused the examination of routing alternatives to a route generally within or adjacent to existing Belle Fourche right-of-way. This approach allowed the Applicant the benefit of utilizing existing pumping station and equipment at existing Belle Fourche fee-owned pump station sites to further reduce the Project’s environmental and public impact.

Belle Fourche next evaluated this existing pipeline route for the optimum configuration. It was determined that to generally locate the Alexander 8-inch Crude Oil Pipeline Project on the southwest edge of its existing right-of-way would require the least amount of additional new permanent right-of-way. Thus, Belle Fourche concluded that no major route deviations from its existing North Dakota right-of-way were needed.

f. Alternative Pipeline Design/Size:

Based on the crude petroleum forecast and discussions with shippers and producers, the Applicant determined that an annual capacity of 30,000 barrels per day would be required and sufficient to meet the transportation requirements of its shippers. The alternatives examined with respect to sizing the 8-inch Crude Oil Pipeline Loop Project to efficiently and cost effectively provide 30,000 bpd of crude petroleum annual capacity included 6-inch, 8-inch and 10-inch diameters. The 8-inch design provides the most efficient and cost effective combination of capital cost and pumping horsepower requirements for the required capacity.

- The in-service date for the Alexander 8-inch Crude Oil Pipeline Loop Project expected to be on or before March 1, 2008.

- The Alexander 8-inch Crude Oil Pipeline Loop Project operations will be operationally integrated with the Belle Fourche Pipeline transportation and gathering system located in North Dakota, Wyoming and Montana.

- The cost of the Alexander 8-inch Crude Oil Pipeline Loop Project is $10.2 million.

- The economic life of the Alexander 8-inch Crude Oil Pipeline Loop Project for this purpose is based on 25-year depreciation; however, the functional life of this pipeline is indefinite following normal maintenance and inspection practices of a federally regulated interstate pipeline system.

- The Alexander 8-inch Crude Oil Pipeline Loop Project will reliably operate year-round, round-the-clock, with the exception of planned system down-time for inspection, maintenance or repair purposes or unplanned down-time due to interruptions in receipts or refinery outages and/or operational disruptions caused by regional power outages or other reasons.

g. Statement concerning Deviations from most recent 10-year Plan:

Belle Fourche Pipeline Company is not currently required to file a 10-year Plan with the North Dakota Public Service Commission. However, the surge in crude oil demand and subsequent price, paired with advances in petroleum production technology in the last 4 years has opened up significant new production in the Bakken Oil Field. Crude oil production has tripled in the last 3 years which is an unexpected but welcomed issue to deal with. This project addresses the transportation associated with this concern.

SECTION D LOCATION

D.1 Study Area:

The study area and corridor selected comprise the existing right-of-way in which the Belle Fourche's existing Bowline Junction to Alexander Station line is located. As stated above, this right-of-way exists mostly of blanket easements. Belle Fourche has historically maintained the existing easements in North Dakota by clearing brush and trees for approximately a 50-foot width. Since the pipeline is proposed to be installed in new 66-foot right-of-way adjacent to the existing 50-foot right-of-way, Belle Fourche hereby requests the Commission to waive the requirement contained in N.D.A.C. 69-06-04-02(1)(b) that the width of the corridor be at least ten percent of its length and not less than one mile.

D.2 Map of Proposed Corridor:

Since this application is a consolidated application for a corridor certificate and a route permit, maps showing the location of exclusion and avoidance areas in area of the corridor are attached as Tab 4 Appendix B of the route permit portion of the application. The original corridor and route of Belle Fourche's existing Bowline Junction to Alexander Station line were selected prior to the adoption of the North Dakota Siting Act but are wholly compatible with the criteria established in the Act.

D.3 Relative Value of Each of the Criteria:

Since this application is a consolidated application for a corridor certificate and a route permit, these matters are discussed in Sections B.4, B.5 and B.6 of the route permit portion of the application (See Tab 3).

D.4 Criteria to be Evaluated:

Since this application is a consolidated application for a corridor certificate and a route permit, these matters are discussed in Sections B.4, B.5 and B.6 of the route permit portion of the application. (See Tab 3)

D.5 General Mitigative Measures to be Taken:

Since this application is a consolidated application for a corridor certificate and a route permit, these matters are discussed in Sections B.4, B.5 and B.6 of the route permit portion of the application. (See Tab 3)

D.6 Qualifications of Persons Contributing to the Study:

The qualifications of the personnel who contributed to the corridor location study are as follows:

(1) Tad True, Vice President – Belle Fourche Pipeline Company

Degree: Bachelor of Business Administration, University of Notre Dame
Experience: 3 years experience in petroleum transportation field

(2) Bob Stamp, Supervising Project Engineer – Belle Fourche Pipeline Company

Degree: Bachelor of Mechanical Engineering, Valparaiso University
Experience: 25 years experience in petroleum transportation field as well as regulatory affairs and compliance.
Professional License
Registered Professional Engineer: Wyoming

(3) Robert Dundas, Environmental Coordinator – Belle Fourche Pipeline Company

Degree: Bachelor of Science - Geology, Utah State University
Experience: 25 years experience in petroleum exploration and environmental field as well as regulatory affairs and compliance.
Professional License
Registered Professional Geologist: Wyoming

(4) Jeff Atwood, Supervising Project Engineer – Belle Fourche Pipeline Company

Degree: Bachelor of Natural Gas Engineering, University of Texas A & I

Experience: 20 years experience in petroleum natural gas processing and transportation field as well as regulatory affairs and compliance.

(5) Kathleen Spilman, Managing Director – Keitu Engineers & Consultants, Inc.

Degree: Bachelor of Science - Chemical Engineering, University of North Dakota
Masters in Management, University of Mary
Experience: 26 years experience in petroleum refining and fuels transportation field as well as regulatory affairs and compliance.
Professional License
Registered Professional Engineer: North Dakota, South Dakota, Montana
Other Training: EPA Watershed Academy

(6) Heather Sivak, Staff Consultant (Biology) – Keitu Engineers & Consultants, Inc.

Degree: Bachelor of Science, Major Biology, Dickinson State University
Experience: 2 years experience in regulatory affairs and compliance.
Other Training: Western Missouri State University – Global Positioning and Mapping

(7) Jaimee Meduna, Staff Consultant (Environmental) – Keitu Engineers & Consultants

Degree: Bachelor of Science, Major Environmental Health, Dickinson State University
Experience: 2 years experience in regulatory affairs and compliance.
Other Training: Western Missouri State University – Global Positioning and Mapping

(8) Wade Burns, Senior Archaeologist – Beaver Creek Archaeology

Degree: Bachelor of Science, Major Anthropology, North Dakota State University
Masters in Science, Anthropology
Experience: 10 years experience in Cultural Resource Management and Field Investigations.
Professional License
Permitted for work by State of North Dakota, US Bureau of Land Management, US Forest Service, US Bureau of Reclamation, US Corps of Engineers
Other Training: US Forest Service – Geotechnical Methods of Subsurface Investigations
University of North Dakota – GIS Certification

D.7 Maps:

a. Map of Criteria Within Study Area:

Since a consolidated application for a corridor certificate and a route permit is being submitted, the copy of the McKenzie County map including U.S.G.S. Quad and Aerial Maps of the Project can be found in Appendix B of the route application presented in Tab 4. Maps of the ND Public Service Commission Exclusion and Avoidance Areas with the route of the Project are also attached as Tab 4 Appendix B of the route permit portion of the application.

b. Mylar maps of study area:

Use of Mylar® maps for recording and transmitting survey information is being rapidly replaced geographic information systems (GIS) data management technology. A waiver from this requirement is submitted in conjunction with this consolidated application.

The GIS software in current use by the ND Public Service Commission staff is ESRI's ArcMAP and companion software packages. A CD-ROM containing electronic copies of ArcMAP shapefiles resulting from the field survey has been included with this application in lieu of providing Mylar® map documentation. (See Tab 7)