APPLICATION FOR CORRIDOR CERTIFICATE

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:

As proposed, the overall project consisting of approximately 313 miles of 20-inch outer-diameter pipeline originates at Cromer, Manitoba, Canada and ends at Clearbrook, Minnesota, and shall be referred to hereinafter as the "LSr Project." The LSr Project will be operationally integrated with the Enbridge Mainline System[1] and shall be used to transport liquid petroleum from the Western Canadian Sedimentary Basin to the existing Enbridge Clearbrook terminal facilities for subsequent delivery of such crude oil supplies to the interconnecting facilities of non-affiliated Minnesota Pipe Line Company ("Minnesota Pipe Line") or to re-enter the Enbridge Mainline System, as more fully described below.

In the United States, the LSr Project begins at the US-Canadian boundary near Neche, North Dakota in Pembina County, and extends approximately 136 miles to end at the existing Enbridge Clearbrook tank farm and terminal facilities in Clearwater County, Minnesota. The LSr Project will be located on or adjacent to the existing multi-line right easements of the Lakehead System. The North Dakota portion of the LSr Project will be located entirely within Pembina County, starting at the international boundary near Neche, North Dakota, and extending southeasterly for approximately 28 miles before exiting North Dakota at the Minnesota border approximately 2 miles northeast of Bowesmont, North Dakota.

With the use of existing pumping units at existing station sites, the LSr Project will have an annual capacity of 186,000 barrels per day ("bpd"). No new pumping facilities will be needed at this time within North Dakota. Also, no

[1] Enbridge Inc. subsidiary, Enbridge Pipelines Inc., owns and operates the Canadian portion of an existing pipeline system that interconnects and delivers the United States into the Enbridge Energy, Limited Partnership system known as the "Lakehead System". These operationally integrated pipeline systems together form the longest liquid petroleum pipeline in the world. Together, these two systems are referred to as the Enbridge Mainline System. Collectively these affiliated entities are referred to as "Enbridge".

new surface facilities will be installed in the State of North Dakota, other than pipeline markers, rectifiers, and block valves which may include small fenced-in enclosures to house associated power and control systems to allow some valves to be operated remotely.

A part of the LSr Project is currently underway in Canada by Enbridge Pipeline Inc. The Canadian portion of the LSr Project consists of approximately 177 miles of 20-inch outer-diameter pipeline, beginning at the existing Cromer, Manitoba tank farm and terminal facility and extending to the southeast to end at the U.S.-Canadian boundary in the Province of Manitoba, which is north of Neche, North Dakota.

As stated above, the LSr Project will be operationally integrated with the existing Enbridge Mainline System and will be used to transport crude petroleum to the Clearbrook tankage facilities for subsequent delivery to interconnected pipeline systems to the south, via non-affiliated Minnesota Pipe Line or to the east of the Clearbrook terminal via the Lakehead System. The estimated cost of the North Dakota portion of the LSr Project is approximately $31.5 million. Enbridge plans to commence construction during spring/summer 2008 and have the LSr Project in service by December 31, 2008. Table 1 - Corridor Certificate shows the annual capacities of the Enbridge pipelines before and after the LSr Project.

As an interstate common carrier of crude petroleum and natural gas liquids, Enbridge's rates, tariffs, and accounting practices are subject to the regulatory authority of the Federal Energy Regulatory Commission (FERC). The rates for the LSr Project will be filed in accordance with applicable FERC rules and regulations, and approved by FERC prior to placing the facilities in-service.

Based on the current throughput forecasts, the economic life of the LSr Project is estimated to be no less than 25 years.

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

As defined in its FERC Tariff on Rules and Regulations for the Lakehead System, Enbridge currently transports the following commodities on its existing multi-pipeline system within the United States:

Condensate (CND)
Light Crude Petroleum (LGT)
Medium Crude Petroleum (MED)
Heavy Crude Petroleum (HVY)
Natural Gas Liquids (NGL)

The LSr Project is expected to transport light crude petroleum and medium crude petroleum.

Enclosed herewith as Exhibit A are three maps showing the Enbridge Mainline System in the following pictorial overviews: Map A-1 provides a view of the Enbridge Mainline System within the international liquid transportation grid in Canada and the various Petroleum Administration for Defense Districts ("PADD") of the United States. This map, along with a more specific map of PADD II enclosed herewith as Map A-2, shows the Lakehead System, proposed expansion projects within this region, and all interconnecting pipelines and refineries within this region as well. Also enclosed is Map A-3, a map showing existing delivery points to numerous refineries along the Enbridge Mainline System in Canada and United States.

As shown on these maps, the Lakehead System also receives crude petroleum from Montana and North Dakota producing fields through the affiliated Enbridge Pipeline (North Dakota) L.L.C. pipeline system (formerly the Portal Pipe Line). No LSr Project receipt or delivery points are contemplated within North Dakota.

The LSr Project will provide incremental capacity needed to transport the increasing supplies of crude oil produced from western Canada to existing interconnecting carriers, primarily in Minnesota, Indiana and Illinois. Other delivery locations include refineries and connected carriers in Wisconsin, Michigan, New York, Ohio and Ontario. Enbridge encloses herewith as Exhibit B an overview map showing the location of the LSr Project route through Pembina County.

As shown in Table 1 - Corridor Certificate, the LSr Project creates incremental capacity on the Enbridge Mainline System thus allowing additional volumes of crude oil to move from Cromer, Manitoba to Clearbrook, Minnesota, and creating the ability for Enbridge to subsequently deliver volumes of crude oil to non-affiliated Minnesota Pipe Line at Clearbrook for ultimate redelivery to refineries in the Minneapolis/St. Paul area, or points east of Clearbrook via the Lakehead System.

Table 1 – Corridor Certificate
Lakehead System Capacities
U.S. Border to Superior, Wisconsin
(bpd)

Line No.	Pre LSr Project	Post LSr Project	Increase in Capacity
1	237,000	237,000	0
2	409,000	442,000	33,000
3	503,000	503,000	0
4	793,000	793,000	0
13	172,000	172,000	0
LSr Project	---	186,000	186,000
Total	2,114,000	2,333,000	219,000

Generally, liquids pipelines are designed at a specified capacity for a known liquid. Most liquids 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. Table 2 – Corridor Certificate, Capacity Definitions provides design data pertinent to the proposed new 20-inch pipeline.

Table 2 – Corridor Certificate
Capacity Definitions

		LSr Project Capacities (bpd)
Ultimate Capacity	Maximum economic expansion capacity of individual line. Requires additional pumping horsepower over current design to meet this capacity	300,000
Design Capacity	Theoretical capacity	207,000
Annual Capacity	Average sustainable rate over a year	186,000
Operating Factor	Historical percentage of full system utilization	90%

A.3. Size and Design:

a. provide a description of the size and design of the ELECTRICAL facility including, but not limited to, the following:

1. **Width of right-of-way;**
2. **Estimated span lengths;**
3. **Anticipated type of structure;**
4. **Approximate length of facility;**
5. **Voltage; and**
6. **The requirement for and general location of any new associated facilities.**

b. provide a description of the size and design of the PIPELINE facility including, but not limited to, the following:

1. **Width of right-of-way;**
2. **Estimated distance between surface structures such as manholes or block valves;**
3. **Pipe size;**
4. **Approximate length of facility;**
5. **Maximum design operating pressure and temperature;**
6. **Maximum design flow rate; and**
7. **The number and general location of compressor or pumping stations**

A.3.a. Not applicable (Electrical Facility).

A.3.b. Description of size and design of pipeline facility.

A.3.b.(1) Width of the Right of Way

The majority of the easements for the Lakehead System in Pembina County, North Dakota were acquired in 1950 for the installation of an 18-inch pipeline. All easements were blanket easements and stated no specific width of right-of-way. Since the initial 18-inch pipeline was constructed, 20-inch, 26-inch, 34-inch and 36/48-inch liquid petroleum pipelines have also been installed within the right-of-way corridor. In 1997, a 12-mile section of 34-inch replacement pipe was installed. To assure the safety of the public and allow adequate space for maintenance of the lines, the

right-of-way is typically kept clear for approximately a 125-foot width.

Construction work space will be approximately 100 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 stream, wetland, 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.

In most cases, the LSr Project will be installed 25 feet south of the most southerly 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 20-inch pipeline while minimizing potential damage to the existing lines.

A.3.b.(2) Estimated Distances Between Surface Structures

Within North Dakota, two (2) mainline remotely operated valves will be installed: one valve will be located at Mile Post 792.0 (Joliette Station) and the other valve will be located upstream (western side) of the Red River of the North. Other surface structures will be limited to pipeline markers and rectifier sites, which are part of the cathodic protection system.

A.3.b.(3) Pipe Size

The pipe to be installed on the LSr Project is 20-inch outer-diameter, 0.250 inch wall thickness, API 5L Grade X70, electric resistance welded (ERW) steel pipe. The maximum allowable operating pressure will be 1260 psig.

The valves to be installed will be 20-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.b.(4) Approximate Length of Facility

Of the total 313 miles of pipe, approximately 136 miles will be located in the United States and 177 miles will be located in Canada. In the United States, approximately 28 miles are located in North Dakota, beginning at the international boundary near Neche, North Dakota and extending southeast, leaving North Dakota at the Minnesota border approximately 2 miles northeast of Bowesmont, North Dakota. The remaining 108 miles are located in Minnesota, beginning at the Minnesota border in Kittson County and continuing to the southeast to end at Enbridge's Clearbrook tank farm and terminal facility in Clearwater County, Minnesota.

A.3.b.(5) Maximum Design Operating Pressure and Temperature

The initial Annual Capacity of the LSr Project will be 186,000 bpd. The maximum allowable operating pressure of this pipe will be 1260 psig. The maximum temperature of the petroleum will be 104°F.

A.3.b.(6) Maximum Design Flow Rate

The design flow rate of the LSr Project is 207,000 bpd.

A.3.b.(7) The Number and General Location of Pumping Stations

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

A.4. Time Schedule

A.4.a. Certificate of Corridor Compatibility

Expected on or before December 31, 2007.

A.4.b. Route Application

Route application submitted in April 2007 as part of this consolidated Certificate of Corridor Compatibility and Route Application.

A.4.c. Route Permit

Expected before December 31, 2007.

A.4.d. Construction Start Date

Proposed commencement date for construction is April 2008.

A.4.e. Construction Complete

Estimated construction completion date is on or before December 31, 2008.

A.4.f. In Service Date

Estimated in service date is on or before December 31, 2008.

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SECTION B - STUDIES

Enbridge's 1994 Capacity Expansion pipeline project (reference Case No. PU-179-93-767) was located along the same route as the LSr Project. In planning the 1994 project, Enbridge completed the following evaluative studies or assessments of the environmental impacts of the proposed facility:

- An extensive cultural resources review was conducted for the Capacity Expansion area in coordination with the State Historical Society of North Dakota (SHSND). This work included a files search and literature review of the Capacity Expansion area, development of an archaeological sensitivity model, performance of Phase I archaeological investigations of selected areas within the corridor, and performance of Phase II evaluations of four potentially significant sites identified in the Phase I investigation. One site, a historic ox-cart trail (the "Angle Road"), was determined to be eligible for listing on the National Register of Historic Places. During the 1994 construction, Enbridge elected to bore under Angle Road to avoid any disturbance.

- A field wetland delineation was conducted to identify jurisdictional wetlands crossed by the route. The presence and demarcated boundaries of wetlands were determined using hydrophytic vegetation, hydric soils, and hydrologic criteria. Each delineated wetland was classified according to the Classification of Wetlands and Deepwater Habitats of the United States (Cowardin system).

- Appropriate federal and state agencies were consulted to identify known occurrences of protected species or sensitive areas in the Capacity Expansion area.

Much of the information obtained during through the 1994 activities listed above is relevant to the LSr Project. As it did in 1994, Enbridge plans to bore under the Angle Road to avoid impacting that site. To update cultural resource information, Enbridge has met with the SHSND and has conducted a current files search and literature review. The results of this work will be provided to the SHSND, and Enbridge will continue to work with the SHSND to identify additional cultural review work, if any, necessary for the LSr Project.

Enbridge has consulted with the North Dakota Game and Fish Department and

the U.S. Fish and Wildlife Service. Based on these consultations, no state-listed or federally listed species are known to frequent the LSr Project area. Enbridge has contacted (or will contact) other appropriate regulatory agencies (*e.g.*, the U.S. Army Corps of Engineers, North Dakota State Water Commission, North Dakota Department of Health Water Quality Division) and will continue to work with these agencies to address potential environmental impacts and obtain applicable permits.

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SECTION C

NEED FOR FACILITY

C.1. an analysis of the need for the proposed facility based on present and projected demand for the product transmitted by the facility, including the most recent system studies supporting the analysis of the need.

a. Planned Use and Purpose

Demand for crude oil transportation on the Lakehead System has been increasing in recent years, rising from 1.35 million bpd in 2003 to 1.52 million bpd on average in 2006 (and was up to 1.63 million bpd during the fourth quarter 2006). Enbridge is undertaking a number of expansions and extensions (see Other Expansions on the Enbridge Mainline System below) to both the Canadian and U.S. portions of the Enbridge Mainline System to respond to this increased transportation demand. As a result of the forecast of significantly higher Canadian petroleum production in the 2008/2009 timeframe, the LSr Project is needed in a timely manner to relieve a bottleneck on the Enbridge Mainline System that has developed at the receipt point at Cromer, Manitoba.

The LSr Project will deliver crude oil into the Enbridge terminal facilities at Clearbrook
for subsequent delivery to non-affiliate connecting carrier Minnesota Pipe Line at Clearbrook or re-entry into the Enbridge Mainline System for delivery into Midwest refinery markets.

The LSr Project anticipates transporting light and medium sour crude oil production which is currently batch injected into the Enbridge Mainline System at Cromer, Manitoba. This Cromer volume is segregated in batches for transportation as it has higher sulfur content than light sweet crude oil. This dedication of volume into the LSr Project will relieve the current and forecast bottleneck on the Enbridge Mainline System for all grades of crude oil moved on the Enbridge Mainline System.

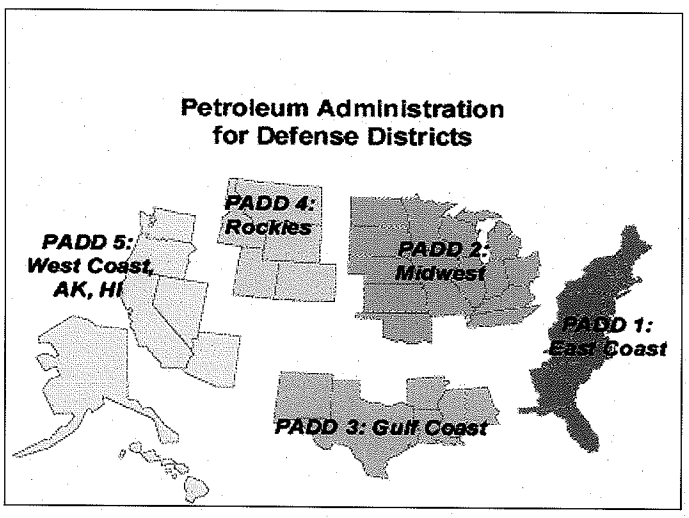
b. Petroleum Supply and Demand in Midwest:

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 the Enbridge Mainline 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.[2] 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 C.1.b below) has fallen to approximately 0.44 million bpd, compared to a high of over 1 million bpd in the mid-1980's.[3]

[2] U.S. Department of Energy, EIA "Annual Energy Outlook 2007 with Projections to 2030", Report #:DOE/EIA-0383(2007)
[3] U.S. Department of Energy, Energy Information Administration (EIA)

Figure C.1.b



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 Mainline System.

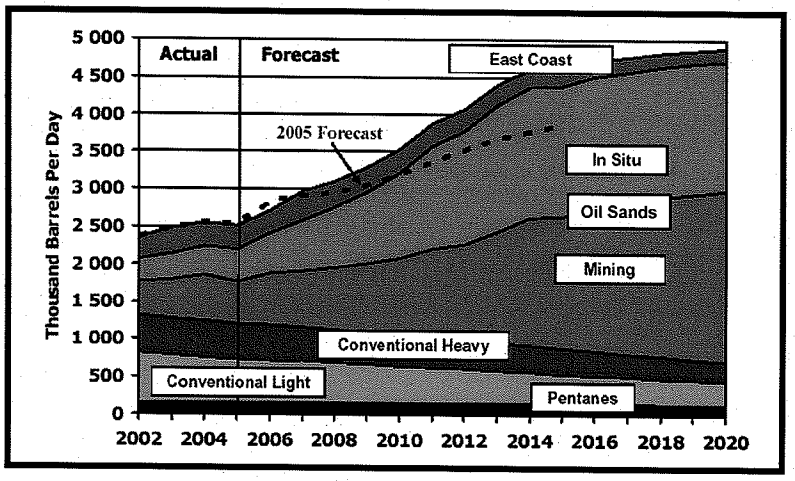
Recently, BP announced its intention to significantly expand its heavy crude oil processing capability[4] and expand its refined crude oil output by up to 15 percent at its Whiting, Indiana refinery serving the region, contingent on increased pipeline capacity from western Canadian supply sources being 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.

[4] BP News Release September 26, 2006.

c. Canadian crude production is increasing

The Canadian Association of Petroleum Producers' ("CAPP") current oil supply forecast for Canadian crude production covering the period 2006 – 2020 (see Exhibit E) anticipates overall western Canadian crude oil production to grow from 2.5 million bpd in 2005 to 4.6 million bpd by 2015, with further potential growth to 4.9 million bpd by 2020 (see Table C.1.d). Within that overall production forecast, the western Canadian crude oil production is anticipated to grow from 2.2 million bpd in 2005 to 4.7 million bpd in 2020, with a substantial amount of that production transported to U.S. refinery markets by Enbridge Mainline System, other Enbridge systems and joint-ventures in which Enbridge participates, and non-affiliated interconnecting facilities.

Table C.1.d
(Table includes Eastern Canadian Crude Oil Production)



Included in this production is the portion of Canadian light and medium crude oil production that enters the Enbridge Mainline System at Cromer Manitoba, currently totaling approximately 183,000 bpd.

As explained more fully herein, Enbridge has a number of current and planned future expansions, including the LSr Project, that will allow Midwestern refiners the needed access to supply sources to meet consumer demand for petroleum products.

d. Crude Oil Pipeline Capacity is Constrained Ex-Western Canada

Today the current capacities of large-diameter crude oil pipelines tasked with transporting western Canadian petroleum production to refinery markets ex-western Canada are in approximate balance with current production levels and market demand. Table 5 of the May 2006 CAPP[5] forecast identifies current pipeline capacity as being in a modest surplus position (320,000 bpd combined excess light and heavy crude capacity) compared to the production volumes available to ex-western Canada markets. Without any pipeline expansions, as Canadian production volumes ramp up, this capacity surplus erodes to a capacity deficiency of 1.65 million bpd by 2015 and 2.0 million bpd by 2020. As early as 2008-2009, light crude export capacity on the Enbridge Mainline System will be at or near capacity, and recent forecast updates conducted by CAPP has prompted its request for Enbridge to de-bottleneck the system as soon as possible.

e. Applicant's LSr Project Increases Pipeline Capacity into the Midwest

The LSr Project will deliver volumes into the Enbridge terminal facilities 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.

The construction of the LSr Project, along with the other contemplated Enbridge Mainline System expansions planned or underway, will efficiently configure the Enbridge Mainline System to the supply patterns of the crude oil producing community, and maximize capacity for transportation to consumer centers. A number of alternatives to the LSr 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 at Cromer.

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

Increased western Canadian crude 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,

[5]See Exhibit E

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[6]

Canadian-produced crude affords Midwest refiners and consumers a supply source that is reliable, ample, secure, and economical. For such reasons, demand by Midwest refiners for Canadian crude has been increasing. Access to Canadian crude is now, and can be in the future, a secure means of satisfying public need and demand for petroleum products.

Interstate and international transmission pipelines, such as those operated by Enbridge, 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.

Refineries that can obtain and process economical Canadian crude oil may enjoy lower supply costs as well as more dependable sourcing and expeditious delivery than otherwise available. Ultimately consumers benefit as enhanced low cost, crude supplies help restrain product prices, 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 world oil shocks and consequences thereof.

g. Other Expansions on the Enbridge Mainline System

Since constructing the first pipeline from Alberta to Superior, Wisconsin in 1950, the Enbridge Mainline System has provided U.S. refineries with secure, economic and reliable access to crude oil, and consequently industry and consumers with ample and competitively priced refined products. Historically, in response to expanding refinery demand as well as increases in western Canadian production, Enbridge has expanded a number of times to increase transport capability from western Canada and North Dakota.

The Enbridge Pipelines (North Dakota) L.L.C. System ("Enbridge North Dakota System") is undertaking an expansion (ND PSC Docket Nos. PU06-330 and PU06-349) to increase its annual capacity into the Enbridge

[6] U.S. Department of Energy, Energy Information Administration's "Annual Energy Outlook," http://www.eia.doe.gov/oiaf/aeo/

Clearbrook terminal from 80,000 bpd to 110,000 bpd. Further expansions to meet the need for pipeline capacity driven by increases in North Dakota and northern Rockies production are under consideration.

In addition to the LSr Project detailed in this application, Enbridge is currently expanding and extending its Lakehead System via a project referred to as the Southern Access Expansion Program. The first stage of this Program is a new 42-inch pipeline, adding 146,000 bpd of capacity from Superior, Wisconsin to the Chicago area and is currently under construction for start-up in early 2008. The second stage of the Southern Access Expansion Program continues the construction of the new 42-inch pipeline to Flanagan, Illinois (just west of Chicago) for completion in early 2009. When complete, these two stages will add 400,000 bpd of capacity on the Enbridge Mainline System ex-Superior, WI. In a third stage of the Southern Access Expansion Program, subject to FERC approval of rates and tariffs, Enbridge will extend its pipeline system from Flanagan, Illinois to reach the Patoka, Illinois hub. Enclosed herewith as Exhibit C is a pictorial view of Enbridge's proposed expansion projects in the United States. For more information regarding these proposed expansion projects, please visit www.enbridge-expansion.com.

In Canada, Enbridge Pipelines Inc. also has projects underway that add pipeline capacity from the northern Alberta oil sands region to Edmonton, Alberta to connect with the Enbridge Mainline System and other interconnecting pipelines transporting to markets in Canada and northern United States.

As Enbridge expands both upstream in Alberta and downstream in Wisconsin and Illinois, the elimination of the system bottleneck with the construction of the LSr Project is an integral element of maximizing long haul capacity into the Midwest.

h. Future Enbridge Expansion

Enbridge's long term planning for pipeline capacity (in consultation with producers and refiners) needed to better serve existing refinery markets and as well as deliver Canadian crude oil into new markets is an ongoing exercise.

Enbridge's forecast supply from western Canadian production and increased supplies from the northern Rockies and North Dakota delivered into

Clearbrook on the Enbridge North Dakota System has also prompted Enbridge to propose the future construction of a new 36-inch pipeline from Alberta to Superior, Wisconsin, known as "Alberta Clipper." Alberta Clipper has received producer support and initial planning and preparations for 2009 start-up is underway. An application for Alberta Clipper will also require an application before the North Dakota Public Service Commission that, subject to successful commercial and regulatory undertakings, will be filed at a later date.

Additionally, Enbridge has proposed a new 20-inch light hydrocarbon (diluent) pipeline from Chicago area to Clearbrook, Minnesota to be built in parallel phases with other pipeline projects described herein. This pipeline project also includes the reversal of an existing 18-inch pipeline from Clearbrook, Minnesota to Edmonton, Alberta which will not require an application before the North Dakota Public Service Commission since no pipeline facilities will be constructed in North Dakota in connection with this reversal.

i. Summary:

The objective of the LSr Project is to alleviate a capacity bottleneck at the Enbridge's Cromer Terminal, thus allowing the Enbridge Mainline System to transport a substantially increased level of volumes of crude petroleum from western Canada to its Clearbrook Terminal and to refinery centers throughout PADD II and beyond. As stated above in Section C.1.a, the dedication of Cromer sourced volume into the LSr Project will relieve the current and forecast capacity bottleneck for all grades of crude oil moved on the Enbridge Mainline System. The most reliable, efficient, and cost effective alternative for accomplishing this objective is the construction and operation of the LSr Project as proposed herein.

C.2 Alternatives to the Proposed Facility

The Applicant has considered alternatives to the LSr Project within the context of the need to de-bottleneck and increase long-term, reliable pipeline capacity downstream of Cromer, Manitoba to efficiently and cost-effectively transport the forecast growth and required crude oil batch configuration for crude oil production to meet the demands of refineries in the United States. With the elimination of injections into the long haul pipelines at Cromer the LSr Project allows existing upstream system capacity will be fully utilized. In addition, Enbridge's Line 2, which runs from Cromer to Superior, Wisconsin,

to be expanded by 33,000 bpd. Coupled with the LSr Project, this will result in a total capacity expansion from Cromer to Clearbrook of 219,000 bpd.

De-bottlenecking the crude pipeline system involves removal of the requirement for injection of Crude Petroleum at Cromer and therefore allows the system upstream of Cromer to operate, unconstrained, at its annual capacity.

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 LSr Project were considered:

C.2(a): **No Action Alternative:** In light of the overall increase in Canadian production, the need to maintain batch segregation, and consequent current bottleneck on this portion of the Enbridge Mainline System, a "no action" alternative is unacceptable to Enbridge and its customers.

C.2(b): **Trucking Alternative:** Currently there is not sufficient tanker trailer truck capacity to transport 186,000 bpd. Moreover, the trucking alternative significantly overburdens current public road capacity. Additionally, should the truck capacity issue be resolved, Enbridge 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. Further, the reliability of trucking this volume of crude oil across the international border is hampered by the available border-crossing points and periodic backup at these crossings due to traffic or security reasons. As this alternative is therefore considered infeasible, the costs and economic life for this alternative have not been estimated.

C.2(c): **Rail Alternative**: Currently there is not sufficient rail tanker car capacity to transport 186,000 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 Enbridge 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.

C.2(d): **Pipeline System Alternatives:** An alternate pipeline route does exist through the Enbridge North Dakota System to Clearbrook, Minnesota, through what is known as the "Portal Link" that crosses the international border near Estevan, Saskatchewan. The Enbridge North Dakota System is currently at full capacity and is not designed for additional volumes of crude oil that will flow on the LSr Project. The alternative of a full looping or twinning of this line to provide the requisite light and medium crude oil capacity was rejected on the basis of a longer route and higher cost to shippers.

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 Minnesota, Wisconsin and greater Chicago area markets that the Enbridge Mainline System serves.

C.2(e): **Alternative Enbridge Pipeline route:** A full route alternative analysis was completed by Enbridge. Enbridge identified and evaluated several options for routing its LSr Project. These studies were designed to define a preferred route that achieves LSr Project objectives, is technologically and economically feasible to construct, and minimizes impacts on landowners and the environment. Based on this assessment Enbridge focused the examination of routing alternatives for the LSr Project to a route generally within or adjacent to existing Enbridge right-of-way. This allowed the Applicant the

benefit of utilizing existing pumping station and equipment at existing Enbridge fee-owned pump station sites to further reduce the LSr Project's environmental and public impact.

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

C.2(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 186,000 bpd would be required and sufficient to meet the transportation requirements of its shippers. The alternatives examined with respect to sizing the LSr Project to efficiently and cost effectively provide 186,000 bpd of crude petroleum annual capacity included 16-inch, 20-inch and 24-inch diameters. The 20-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 LSr Project expected to be on or before December 31, 2008.
- The LSr Project operations will be operationally integrated with the Enbridge Mainline System.
- The cost of the North Dakota portion of the LSr Project is $31.5 million.
- The economic life of the LSr Project for this purpose is based on a 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 LSr 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.

C.3. Statement Concerning Deviations from Most Recent 10-Year Plan

Enbridge's currently filed 10-year plan with the North Dakota Public Service Commission did not anticipate the need to install additional pipeline along the Lakehead System. Enbridge does not own any of the crude petroleum or natural gas liquids transported in its pipeline and Enbridge does not determine markets or destinations for petroleum commodities. Enbridge's business activity is to provide a cost effective transportation service which is available to anyone tendering commodities for transportation pursuant to tariffs published and on file with the FERC and in accordance with said rules and regulations as well as the Interstate Commerce Act. Enbridge diligently works to anticipate the need for additional pipeline capacity by relying upon forecasts for throughput generated by shippers on the system but also on shippers' service requests, recognizing that they are generally aware of market dynamics consequent dispositions of petroleum and petroleum-based commodities.

Within the last few months, new forecasts have prompted shippers on the Enbridge Mainline System to request additional capacity that requires Enbridge to expand its existing system. Thus Enbridge is responding to such shippers' request by constructing the LSr Project as well as other capacity initiatives.

APPLICATION FOR CORRIDOR CERTIFICATE

SECTION D

LOCATION

D.1. Study Area:

The study area and corridor selected comprise the existing right-of-way in which the Lakehead System is located. As stated above, this right-of-way exists mostly of blanket easements. Enbridge has historically maintained the existing easements in North Dakota by clearing brush and trees for approximately a 125-foot width. Since the pipeline is proposed to be installed within the corridor of the existing right-of-way, Enbridge 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 Appendix D of the route permit portion of the application. The original corridor and route of the Lakehead System 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.

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.

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.

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) James Crawford, Manager, Engineering
Degree: Bachelor of Science, University of Wisconsin
Experience: 21 years experience in pipeline engineering and operations
Other Training: Engineering Professional Development, Engineering Mechanics, University of Wisconsin

(2) Jerrid Anderson, Supervising Project Engineer
Degree: Bachelor of Mechanical Engineering, University of Minnesota
MBA, University of St. Thomas
Experience: 16 years experience in pipeline engineering field
Professional License, Registered Professional Engineer, Minnesota (P.E.)

(3) Shaun Kavajecz, Supevisor, Environmental Business Development
Degree: B.S. Accounting
Experience: 22 years experience with 19 years directly related to pipeline safety, compliance and environmental management.

(4) Paul Meneghini, Senior Environmental Analyst
Degree: BS Civil Engineering, MBA in Environmental Management
Experience: 4 years experience in pipeline environmental regulatory compliance, and thirteen years total in general environmental compliance.
Other: Professional Engineer (Minnesota)

(5) Joe Reinemann
President, Natural Resource Group, Inc.
Degree: BA, Geography, University of Wisconsin – Madison 1988

Other Training: Alaska Native Cultural Awareness Workshop
FERC Interstate Natural Gas Facility Planning
FERC Natural Gas Pipeline Environmental Compliance
FERC Environmental Report Preparation
FERC Industry Outreach Training – Cultural Resources
Environmental Training Inst. National Environmental Policy Act Compliance
Minnesota Pollution Control Agency Erosion and Sediment Control Plan Design Certification
Member, National Association of Environmental Professionals

Experience: 18 years experience in energy-related regulatory compliance, including 18 years of pipeline-related environmental assessment and permitting

(6) Michael Harris, Sr. Lands and Right-of-Way Specialist
Degree: A.A.S., Supervisory Management
Experience: 18 years experience in Right-of-Way, land acquisitions and damage settlements.
Other Training and Licenses: International Right of Way Association designation of: Sr. Right-of-Way Agent- with IRWA certifications in Environment and Negotiations

D.7. Maps

a. Map of Criteria Within Study Area

A copy of the Pembina County map including U.S.G.S. Quad and Aerial Maps of the LSr Project are enclosed herewith as Exhibit D. Additionally, since this application is a consolidated application for a corridor certificate and a route permit, maps of the ND PSC Exclusion and Avoidance Areas with the route of the LSr Project are attached hereto as Appendix D of the route permit portion of the application.

b. Mylar maps of study area.

As this process for producing construction maps and drawings is no longer in use, Mylar maps have not been included as part of this application.