



NORTH DAKOTA PUBLIC SERVICE COMMISSION

**APPLICATION OF
ENBRIDGE PIPELINES (NORTH DAKOTA) LLC
for
CERTIFICATE OF CORRIDOR COMPATIBILITY**

**BEAVER LODGE LOOP PROJECT
NOVEMBER 2010**

TABLE OF CONTENTS

SECTION A	<u>DESCRIPTION OF PROPOSED FACILITY</u>	
A.1	DESCRIBE THE TYPE OF FACILITY AND ITS PURPOSE.	1
A.2	DESCRIBE THE TYPE, SOURCE AND FINAL DESTINATION OF THE PRODUCT	5
A.3	SIZE AND DESIGN	7
A.4	TIME SCHEDULE.....	14
SECTION B	<u>STUDIES</u>	
B.1	CULTURAL RESOURCES INVESTIGATIONS	15
B.2	WETLAND ASSESSMENT	17
B.3	BIOLOGICAL RESOURCES.....	19
B.4	OTHER AGENCY CONSULTATIONS	21
SECTION C	<u>NEED FOR THE FACILITY</u>	
C.1	AN ANALYSIS OF THE NEED FOR THE PROPOSED FACILITY BASED ON PRESENT AND PROJECTED DEMAND FOR THE PRODUCT TRANSMITTED BY THE FACILITY.....	25
C.2	ALTERNATIVES TO THE PROPOSED FACILITY	32
C.3	STATEMENT CONCERNING DEVIATIONS FROM MOST RECENT 10-YEAR PLAN.....	38

SECTION D LOCATION

D.1	STUDY AREA.....	39
D.2	MAP OF PROPOSED CORRIDOR.....	39
D.3	RELATIVE VALUE OF EACH OF THE CRITERIA	39
D.4	CRITERIA TO BE EVALUATED	40
D.5	GENERAL MITIGATIVE MEASURES TO BE TAKEN	40
D.6	QUALIFICATIONS OF PERSONS CONTRIBUTING TO THE STUDY.....	40
D.7	MAPS	41

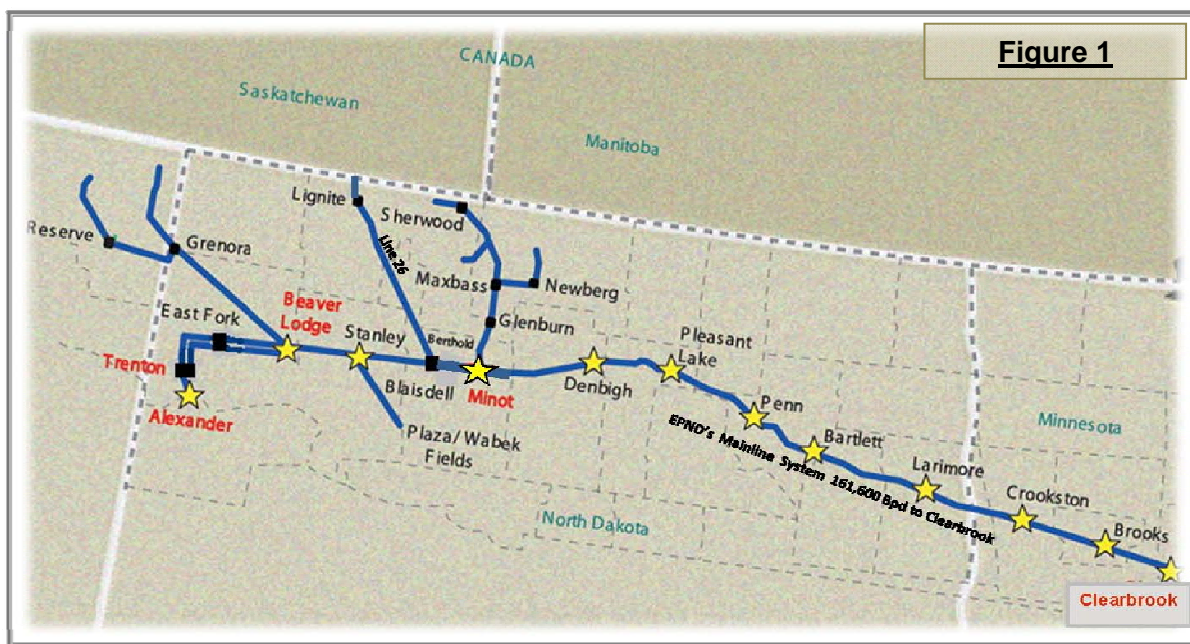
<u>LIST OF TABLES</u>	<u>TABLE OF CONTENTS</u>	<u>PAGE</u>
TABLE 1	CAPACITY DEFINITIONS	7
TABLE 2	RIGHT OF WAY REQUIREMENTS AND CONSTRUCTION WORKSPACE - Co-located with Line 82	8
TABLE 3	RIGHT OF WAY REQUIREMENTS AND CONSTRUCTION WORKSPACE - Route Variances	8
TABLE 4	NORTH DAKOTA TRUST LANDS CROSSED BY PROPOSED PIPELINE ROUTE	23
TABLE 5	NDIC COMPARISON STUDIES OF BAKKEN, THREE FORKS, AND WILLISTON BASIS	26
TABLE 6	NORTH DAKOTA AVERAGE DAILY OIL PRODUCTION FROM BAKKEN FORMATION	27
 <u>LIST OF FIGURES</u>		 <u>PAGE</u>
FIGURE 1	OVERVIEW MAP OF EPND'S NORTH DAKOTA PIPELINE SYSTEM	1
FIGURE 2	OVERVIEW MAP OF BAKKEN PIPELINE PROGRAM	2
FIGURE 3	OVERVIEW MAP OF BEAVER LODGE LOOP PROJECT	4
FIGURE 4	OVERVIEW MAP OF BAKKEN & THREE FORKS FORMATIONS	26
FIGURE 5	REGIONAL MAP SHOWING PROPOSED PROJECT LOCATION WITHIN BAKKEN & THREE FORKS FORMATIONS	28
FIGURE 6	OVERVIEW MAP OF THE SORTI-DUNN PIPELINE PROJECT	30

**APPLICATION FOR CORRIDOR CERTIFICATE
SECTION A
DESCRIPTION OF PROPOSED FACILITY**

A.1. DESCRIBE THE TYPE OF FACILITY ADDRESSED IN THIS APPLICATION. THE DESCRIPTION SHALL INCLUDE THE PURPOSE OF THE FACILITY AND THE TECHNOLOGY TO BE EMPLOYED.

Background Information

Since 2005, Enbridge Pipelines (North Dakota) LLC¹ (“EPND”) has been responding to its shippers’ transportation requirements through the methodical execution of various expansion projects² designed to add incremental capacity to its North Dakota pipeline system (see Figure 1 below). In January 2010, EPND completed its 51,600 barrel per



day (“bpd”) expansion, increasing its annual daily capacity to 161,600 bpd, effectively doubling its pipeline capacity into the Clearbrook Terminal in less than a 24-month period. Shippers immediately utilized this additional capacity to Clearbrook requiring EPND to develop additional expansion projects to meet the current and future transportation requirements of EPND’s shippers transporting supplies from the Williston Basin, an increasingly prolific petroleum producing region.

¹ EPND is a wholly owned subsidiary of Enbridge Energy Partners, L.P. (Enbridge Partners), which is a Delaware master limited partnership headquartered at 1100 Louisiana, Suite 3300, Houston, Texas 77002 (ph. 713-821-2000; www.enbridgepartners.com).

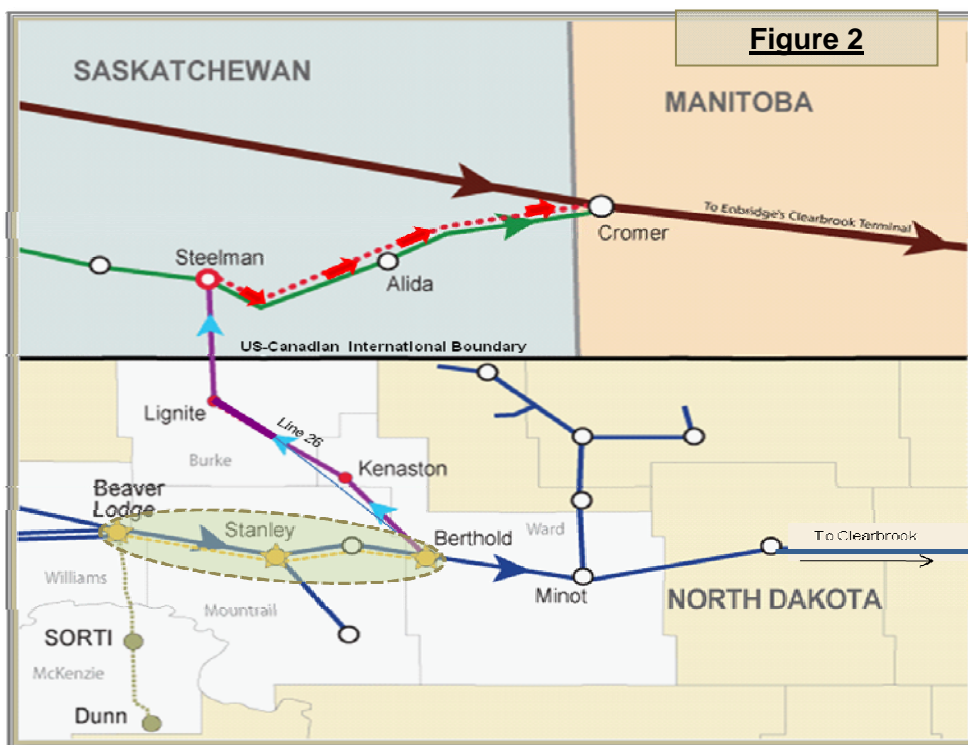
² In Docket No. PU-05-274, EPND’s Phase 1 and 2 Expansion Projects were approved by the North Dakota Public Service Commission (ND-PSC) and placed in-service in 2005 and April 2007 respectively.

In Docket Nos. PU- 06-317; PU-06-330; and PU-06-349, EPND’s Phase 3, 4 and 5 Expansion Projects were approved by the ND-PSC and was fully placed in-service on January 2008.

In Docket No. PU-07-791, EPND’s Phase 6 approved by the ND-PSC in July, 2008 and placed into service in January 2010.

As described in its recently filed Bakken Pipeline Project US filing (Docket No. PU-10-612), EPND has developed the next project in the series of independent, standalone, but yet complementary, expansion projects referred to as the “Bakken Pipeline Expansion Program” or “Program”. This Program has been designed to respond incrementally to the transportation needs of the Bakken shippers, especially as increased drilling activity comes online and additional transportation take-away capacity is necessary to move Williston Basin production to market. EPND anticipates filing other independent projects as part of this Program as supported by its shippers (see Section C.1.b of this application for more details on EPND’s expansion projects).

As proposed herein, EPND is undertaking the next project in its Bakken Program which is designed to add new export capacity to its pipeline system from Beaver Lodge Station in Williams County to Berthold Station in Ward County. This project although independent, compliments the Bakken Pipeline Project US, because it



provides incremental capacity along this existing route through construction of a new transmission feeder line designed to transport up to 145,800 bpd into Berthold. This new supply originates from new and increasing receipt volumes being delivered to EPND from gathering areas in Williams, McKenzie and Mountrail Counties. From Berthold, shippers will be able to reach refinery markets on Line 26 that EPND proposes to expand (as filed in Docket PU-10-612) or its Line 82 to Clearbrook, as

more fully described in this application below. (See shaded area in Figure 2 which shows the overall location of the Project being proposed herein.)

A.1.a Type of Facility

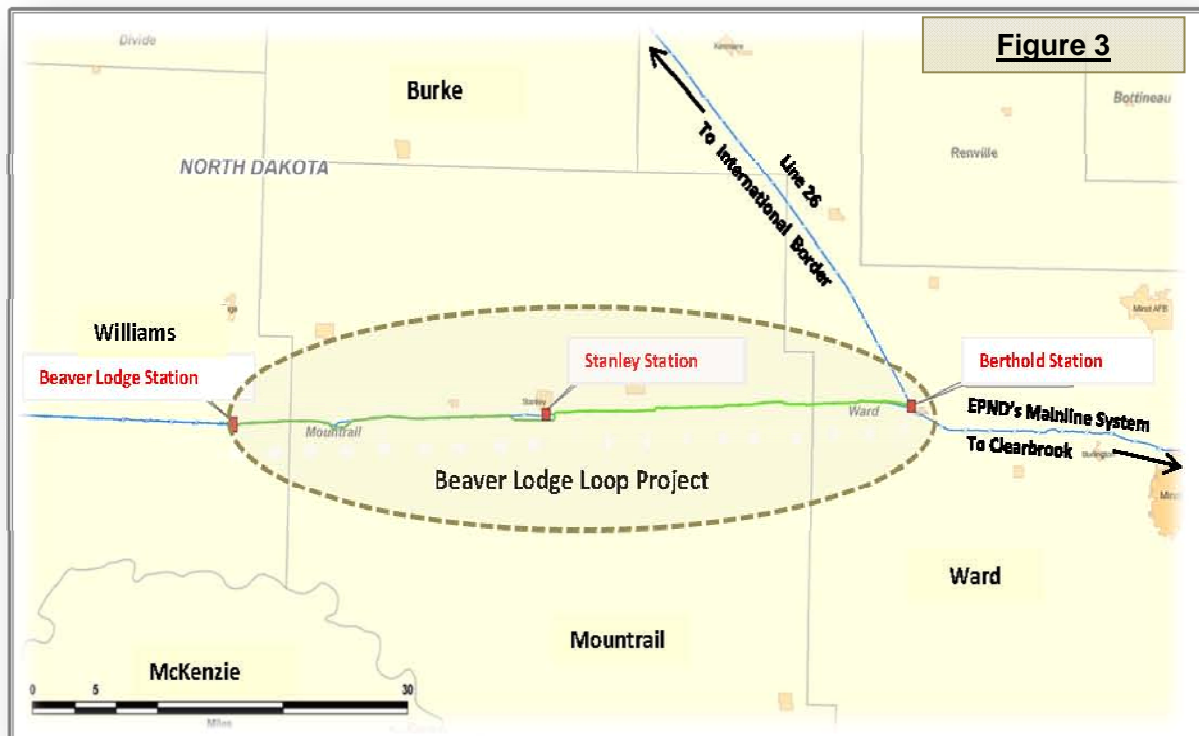
EPND owns and operates a 968-mile existing underground petroleum gathering and mainline pipeline system that extends from eastern Montana through North Dakota to Clearbrook, Minnesota and also extends northward to the US-Canadian International Boundary where EPND's transmission line (Line 26) ties to its Canadian counterpart's pipeline system near the town of Lignite in Burke County, North Dakota. (See Exhibit A.1, EPND System Map).

In this application, EPND is proposing to expand the export capacity of its pipeline system to accommodate the receipt of new and increasing volumes of production being delivered from gathering areas in Williams, McKenzie and Mountrail Counties. This project, referred to as the "Beaver Lodge Loop Project" or "Project" involves the construction of a new transmission line. The proposed transmission line will consist of approximately 56 miles of 16-inch diameter pipeline, and traverse the Williams, Mountrail, and Ward Counties. The majority of the Project's length will parallel EPND's Line 82 pipeline from Beaver Lodge Station and Terminal Facility in Williams County to its Berthold Station and Terminal Facility in Ward County (see Figure 3 for a pictorial view of the Project area). The Project also includes the installation of new pumping station facilities and tankage at EPND's Beaver Lodge, Stanley and Berthold Station sites, respectively (see Sections A.3.b.(7)(i)–A.3.b.(7)(iii) for more details on new facilities being installed at each station site and any specific new land requirements). As proposed, this Project will provide Bakken shippers with an incremental 145,800 bpd of additional pipeline capacity necessary to move Bakken production from new and existing receipt locations at EPND's Beaver Lodge and Stanley Stations in Williams and Mountrail Counties to its Berthold Station in Ward County. From the Berthold Station, shippers will have access to market via EPND's pipeline to Clearbrook or its proposed expanded Line 26 (as filed in Docket PU-10-612) via interconnects with EPND's Canadian counterpart's pipeline systems to Cromer, Manitoba for access to Enbridge's Mainline System³.

³ Enbridge Energy, Limited Partnership, a wholly owned subsidiary of Enbridge Energy Partners, L.P. and an affiliate of Enbridge Inc., owns and operates the U.S. portion of the existing Enbridge Mainline System known as the "Lakehead System". Enbridge Pipelines Inc. a wholly owned subsidiary of Enbridge Inc., owns and operates the Canadian portion of the existing Enbridge Mainline System. These operationally integrated pipeline systems which interconnect at the U.S./Canadian International Border Line 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."

A.1.b Purpose of Proposed Facilities

The purpose of the proposed facilities is to relieve much of the current demand for pipeline capacity out of the gathering hubs within the Bakken and Three Forks production areas, as well as provide the foundation for timely future expansions, as required and supported by its shippers to meet the transportation needs of this region. As proposed, the Project will provide the new pipeline capacity necessary to



move 145,800 bpd of Bakken and Three Forks production from Beaver Lodge to Berthold, North Dakota. At Berthold, EPND's shippers will have access to refinery markets accessed from EPND's pipeline system or Enbridge Mainline System at Clearbrook, including the Minneapolis/St. Paul refineries accessed by other third-party pipelines originating at Clearbrook Terminal. From Clearbrook, shippers will have access to refineries throughout the Great Lakes region of the Upper Midwest and the Midcontinent markets connected to Cushing, Oklahoma via Enbridge's Mainline System or eastern markets via other interconnecting third-party pipelines.

In December 2009, EPND conducted a successful non-binding open season receiving requests for pipeline capacity out of North Dakota Bakken region in the range of 100,000 – 130,000 bpd. Since that time, EPND has further received sufficient binding commitments to proceed with the Beaver Lodge Loop Project and

its Bakken Pipeline Project (US and Canada), as discussed in more detail in Section C. Presently, EPND is conducting a binding open season (August 26, 2010-November 30, 2010) to solicit shipper commitment for additional capacity on these two projects, as well as Shipper commitment for capacity on the SORTI and Dunn Projects (see Section C.1.b for a brief project description of these separate projects to be proposed in separate proceedings before the North Dakota Public Service Commission ("ND-PSC")).

As proposed, the Beaver Lodge Loop Project is a reliable, efficient, and cost effective solution to meet long-term demand and transportation needs of EPND's shippers who require access to refineries in the Upper Midwest and Great Lakes region. This Project, although independent, complements the Bakken Pipeline Project US. It is a feeder line transporting new and increasing crude oil volumes from the Bakken and Three Forks Formation receipt locations to EPND's Berthold Station and Terminal. There, shippers will have access to the best options and greatest connectivity to North American refineries and marketing hubs via EPND's pipeline system to Clearbrook or EPND's expanded Line 26 (Docket No. PU-10-612) and subsequent connection with Enbridge's Mainline System.

The estimated cost of the proposed Beaver Lodge Loop Project is approximately \$133 million.

A.2 DESCRIBE THE TYPE, SOURCE AND FINAL DESTINATION OF THE PRODUCT TO BE TRANSMITTED BY THE PROPOSED FACILITY.

Type

Upon placing the Beaver Lodge Loop Project in service to transport its annual design capacity of 145,800 bpd, EPND plans to dedicate this pipeline to the movement of light sweet domestic crude production as defined in its Federal Energy Regulatory Commission (FERC) Tariff on Rules and Regulations.

Source

The primary source of supply for the Beaver Lodge Loop Project is production from the Williston Basin spanning Montana, North Dakota, South Dakota and Wyoming. The primary geographical sources for North Dakota Sweet production are those regions of Montana and North Dakota that comprise the western and central portion of the Williston Basin.

Final Destination

These supply volumes will have the ability to reach a wide number of refineries and marketing hubs through interconnects with EPND affiliated Enbridge Mainline System and third-party pipelines at Clearbrook, Minnesota, as described in more detail in Section C.1.

As proposed, this Project will add an initial 145,800 bpd of annual pipeline capacity to EPND's pipeline system from Beaver Lodge Station in Williams County to Berthold Station in Ward County. At Berthold, EPND's shippers will have access to refinery markets accessed from EPND's pipeline system or Enbridge Mainline System at Clearbrook, including the Minneapolis/St. Paul refineries accessed by other third-party pipelines originating at Clearbrook Terminal. From Clearbrook, shippers will have access to refineries throughout the Great Lakes region of the Upper Midwest and the Midcontinent markets connected to Cushing, Oklahoma via Enbridge's Mainline System or eastern markets via other interconnecting third-party pipelines.

Generally, liquids pipelines are designed at a specified capacity for a known liquid. Most liquids pipelines transport a variety of 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 in a repeatable sequence. Both the fluid characteristics and batch sequence will affect the capacity of the pipeline.

Design and Annual Capacity

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 type 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 1 Capacity Definitions		
BEAVER LODGE LOOP PROJECT		CAPACITIES (BPD)
Ultimate Annual Capacity	Maximum economic expansion capacity of individual pipeline that is sustainable average daily rate per day over a year	204,000
Ultimate Design Capacity	Maximum economic expansion capacity of individual pipeline. Requires additional pumping horsepower over current design to meet this capacity	226,700
Initial Design Capacity	Theoretical capacity	162,000
Initial Annual Capacity (90%)	Average sustainable rate average barrels per day over a year (90% of Design Capacity)	145,800

A.3 SIZE AND DESIGN:

A.3.a Electric Facility

Not Applicable.

A.3.b Provide a description of the size and design of the pipeline facility including, but not limited to, the following:

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

Pipeline: EPND plans to install the majority of its new 16-inch diameter transmission line parallel to its existing Line 82 pipeline from the Beaver Lodge Station and Terminal Facility in Williams County to the Berthold Station and Terminal Facility in Ward County. However, there will be certain areas along the proposed pipeline route where deviations from the existing Line 82 pipeline will require new right-of-way to

route around specific areas such as encroachments near the existing pipeline or to avoid certain land features.

Of the total 56 miles, approximately 43.7 miles of the new 16-inch diameter pipeline will be co-located parallel to the EPND's existing Line 82 pipeline, thus no new pipeline right-of-way will be required. The new pipeline will be installed with a 25-foot offset or buffer from EPND's existing Line 82, and will have the following right-of-way requirements and construction footprint (see Table 2).

Table 2 Right-of-Way Requirements and Construction Workspace Co-located with Line 82					
Land Type	Study Area	Survey Corridor	Typical Construction Footprint	Extra Temporary Work Space at Crossings	Offset Between New & Existing Pipelines
Upland	1-mile	250 feet	110 feet	75 feet	25 feet
Wetland	1-mile	250 feet	85 feet	75 feet	25 feet

For the remaining 12.3 miles of new 16-inch diameter pipeline, new right-of-way easements will be required in certain areas where route variances are necessary to avoid specific areas of encroachment near EPND's existing pipeline or to avoid certain land features. Thus, EPND will have the following right-of-way requirements and construction footprint (see Table 3).

Table 3 Right-of-Way Requirements and Construction Workspace Route Variances						
Land Type	Study Area	Survey Corridor	Typical Construction Footprint	Typical Temporary Work Space	Extra Temporary Work Space at Crossings	New Permanent Right-of-Way
Upland	1-mile	250 feet	110 feet	60 feet	75 feet	50 feet
Wetland	1-mile	250 feet	85 feet	35 feet	75 feet	50 feet

For more detailed information regarding the right-of-way requirements and typical right-of-way configuration drawings, see Section B.4.c.(9) of the Route Permit Application and Exhibit M, which are being filed as part of this combined application.

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

The average estimated distance between the existing pumping stations for the Beaver Lodge Loop Project is approximately 26 miles.

A.3.b.(3) Pipe Size

Cross Country Pipe: Line	Crossing Pipe
16-inch outside diameter (16-inch nominal)	16-inch outside diameter (16-inch nominal)
.281 wall thickness	.312 - .500 wall thickness
Grade X-60 API ⁴ 5L	Grade X-60 API 5L
Steel Pipe	Steel Pipe

A.3.b.(4) Approximate Length of Facility

Beaver Lodge Loop Project proposes to install approximately 56 miles of 16-inch diameter pipeline from Beaver Lodge Station, through Stanley Station, and ending at Berthold Station.

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

The design pressure for the station piping is 1480 psig; normal operating pressures are anticipated to be less than 1440 psig. Operating temperatures will range from 41° to 65° F.

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

The maximum design flow rate for the new pipeline is approximately 145,800 bpd.

A.3.b.(7) The General Location of the Beaver Lodge Loop Project

See Exhibit A.2 for general overview map of the Beaver Lodge Loop Project.

⁴ American Petroleum Institute Standard API-5L

A.3.b.(7)(i) Location of the Proposed Pump Stations and Terminals:

Existing Beaver Lodge Pump Station and Terminal

Location

10351 60th Street NW
Tioga, North Dakota 58852

Legal Description

600' x 600' tract and Outlet 2 in SE ¼ SW ¼ and SW ¼ SE ¼ Section 32,
Township 156 North, Range 95 West, Williams County, North Dakota.

New Facilities

New manifolds
New pipeline balancing facilities
2 new 5000 horse power ("HP") pump assemblies and variable frequency drive
("VFDs") assemblies
1 new NPS 16 pig launcher
4 new control buildings
4 new 350 horsepower booster pumps with VFDs
Interconnecting station pipe & valves
New utility and maintenance building
New sumps
Electrical infrastructure upgrades

Other Work

All civil service work required to prepare station site for proposed station facilities

Tankage

New 150,000 BBL breakout and storage tank

Land Requirements

EPND has secured an Option to Purchase 40 acres of land located immediately across the road from its existing Beaver Lodge Station and Terminal site (see Exhibit B.1 for a station overview map). The new 40-acre tract of land is located on the south side of County Road 8 directly across from EPND's existing Beaver Lodge Station in Section 5, Township 155 North, Range 95 West, Williams County, North Dakota.

The existing Beaver Lodge Station consists of approximately 59 acres, all of which EPND owns in fee. Of the 59 acres, approximately 28 acres has been previously sited and approved by this Commission on August 23, 2006 in Docket No. PU-06-317. The remaining 29 acres acquired since the disposition of Docket No. PU-06-317 will be sited in this application.

A.3.b.(7)(i) Location of the Proposed Pump Stations and Terminals:

Beaver Lodge Pump Station and Terminal (Cont'd)

Plot Plan, Topographical, and Aerial Maps of Proposed Stations and Terminals
Maps are enclosed herewith as follows:

- Exhibit B.1 - Plot Plans
 - Page 1 – Beaver Lodge Station Overview Map
 - Page 2 – Existing Beaver Lodge Station
 - Page 3 – Newly acquired 40-acre tract
- Exhibit B.2 - Topo Map
- Exhibit B.3 - Aerial Map

A.3.b.(7)(ii) Location of the Proposed Pump Stations and Terminals:

Existing Stanley Pump Station and Terminal

Location

6150 Highway 8
Stanley, North Dakota 58784

Legal Description:

The existing Stanley Pump Station and Terminal lies on 40.14 acres of land owned by EPND and located in the NW $\frac{1}{4}$ SW $\frac{1}{4}$, Section 27, Township 156 North, Range 91 West, Mountrail County, North Dakota.

New Facilities and Building on Existing Terminal:

Expansion of existing manifolds
New utility and maintenance building
2 new 3500 horsepower ("HP") pump assemblies and variable frequency drive ("VFDs") assemblies
2 new 300 horsepower booster pumps with VFDs
2 new control buildings
New pipeline balancing facilities
1 new NPS 16 pig receiver
1 new NPS 16 pig launcher
Electrical infrastructure upgrades
Interconnecting station pipe and valves

Other Work

All civil service work required to prepare station site for proposed station facilities

Tankage

New 80,000 BBL breakout and storage tank

Land Requirements

All work activities will be performed within EPND's existing 40 acre station site as previously approved and permitted by this Commission on December 5, 2008 PU-08-812. No new land will be required for this Project.

Plot Plan, Topographical, and Aerial Maps of Proposed Stations and Terminals

Maps are enclosed herewith as:

- Exhibit B.4 (Station Plot Plan)
- Exhibit B.5 (Topo Map)
- Exhibit B.6 (Aerial Map)

A.3.b.(7)(iii) Location of the Proposed Pump Stations and Terminals:

Existing Berthold Pump Station and Terminal

Location

8501 296th NW
Berthold, North Dakota 58718

Legal Description

The existing Berthold Station and Terminal is located in Section 20 and 21, Township 156 North, Range 86 West, in Ward County, North Dakota.

New Facilities

New pipeline balancing facilities
1 new NPS 16 pig receiver
Interconnecting pipe & valves
New manifolds
New sump

Other Work

All civil service work required to prepare station site for proposed station facilities

Tankage

2 new 80,000 BBL Tanks

Land Requirements

Not applicable.

Plot Plan, Topographical, and Aerial Maps of Proposed Stations and Terminals

Maps are enclosed herewith as follows:

- Exhibit B.7 (Station Plot Plan)
- Exhibit B.8 (Topo Map)
- Exhibit B.9 (Aerial Map)

A.4 TIME SCHEDULE

A.4.a Certificate of Corridor Compatibility

EPND respectfully requests that the ND-PSC approve its Application for Certificate of Corridor Compatibility by April 2011.

A.4.b Route Application

EPND's Route Permit Application was submitted by EPND in November 2010 concurrent with this consolidated Application for a Certificate of Corridor Compatibility and Route Permit.

A.4.c Route Permit

EPND respectfully requests its route permit approval from the North Dakota Public Service Commission by April 2011.

A.4.d Construction Start Date

Proposed commencement of construction is immediately upon receipt of appropriate approvals. Expected start construction date is on or before June 2011.

A.4.e Construction Complete

Estimated construction completion date is on or before the beginning of 4th Quarter 2012.

A.4.f In-Service Date

Estimated in-service date is January 1, 2013.

APPLICATION FOR CORRIDOR CERTIFICATE
SECTION B
STUDIES

EPND consulted with several federal, state, and local agencies to identify environmental resources in the Project area and determine what, if any, environmental studies or assessments would be required on the proposed Project. In these consultations, EPND requested a review of the proposed route and a one-mile wide study area centered on the pipeline. In this application, EPND extended its study area around areas associated with facility expansion, which have not been previously sited and permitted by ND-PSC (i.e. new land requirements at Beaver Lodge Pump Station and Terminal). Because the existing Beaver Lodge, Stanley and Berthold Pump Stations and Terminals have been previously sited and permitted, the study area in these locations is associated with the pipeline and not the facility boundaries. Discussion of issues and concerns raised by agency personnel are included below.

Summaries of these consultations are included in the following paragraphs. Further details regarding these consultations as they relate to Exclusion Areas, Avoidance Areas, and Selection Criteria are included in Section B.4 of the Route Permit Application and discussion of specific impacts and mitigation measures are included in Section B.4 of the Application for a Route Permit. Documentation of agency consultations is included in Exhibit F.

EPND commissioned cultural, wetland, and biological surveys based on an initial pipeline route established in May 2010. Since the surveys were conducted, EPND has made some minor route adjustments and identified areas (outside of the original survey corridor) where extra workspace may be required. Presently, EPND is completing surveys in these areas and will submit supplemental filings to the NDPSC upon their completion.

B.1 CULTURAL RESOURCE INVESTIGATIONS

B.1.a State Historical Society of North Dakota “SHSND” (State Historic Preservation Office or NDSHPO)

The State Historical Society of North Dakota (SHSND) is the agency within North Dakota responsible for protecting historic properties. As such, the North Dakota State Historic Preservation Office (NDSHPO) within the Historic Preservation Division (HPD) of the NDSHPO reviews federally-proposed, licensed and/or funded projects and the concomitant cultural resources identification, evaluation, protection, preservation, and development and/or mitigation efforts. Further, the HPD, through its Director, is responsible for preservation and interpretation of antiquities at the state level. North Dakota Century Code 55-03 outlines the permitting process for

cultural resource investigations. The NDSHPO is charged with the responsibility of implementing the permitting process.

B.1.a.(1) Cultural Resource Investigations

Kadmas, Lee & Jackson (KL&J) completed a literature review for the Beaver Lodge Loop Project in May 2010. There were 228 cultural resources identified within a one-mile buffer of the proposed pipeline corridor. Three of the previously recorded cultural resources are located within the corridor itself. The literature review also revealed that 60 previous cultural resources inventories have been conducted within one mile of the study area.

KL&J conducted a Class III inventory field survey of the pipeline corridor in May 2010. The survey consisted of pedestrian survey at 20-meter transects of a 250-foot wide corridor. Ground visibility was variable, but adequate, during the survey, averaging 35 percent. Auger probes were excavated at several locations where ground visibility was near zero percent. The field survey revisited the three previously recorded cultural resources sites, and recorded four newly identified sites. All the cultural resources recorded are archaeological sites, that is, they are buried and ground surface resources. No above ground properties were recorded. KL&J prepared a technical report of their methods, findings and recommendations for site treatment, and submitted it to the NDSHPO on July 20, 2010. Of the seven archaeological sites visited, two were recommended as *not eligible for listing* on the National Register of Historic Places ("NRHP"), and five were *unevaluated for listing* on the NRHP. The report recommended that if the unevaluated sites were avoided during pipeline construction, there would be *No Affects to Historic Properties*. The report further recommended that if any of the unevaluated sites could not be avoided, they should be evaluated for NRHP listing by testing for the presence of subsurface deposits, and datable artifacts or features. In a letter dated August 13, 2010, NDSHPO agreed with the recommendations outlined in the KL&J report (see Exhibit C.2)

Of the five *unevaluated* sites, EPND has made a minor route deviation near Mile Post 15 to avoid one of the five sites. However, for the remaining four sites, KL&J is conducting further field testing of these sites to determine whether they meet the criteria for being listed on the NRHP, and to further determine if avoidance or mitigative measures will be necessary at these locations. Once the field testing is completed, KL&J will report its findings and recommendations to NDSHPO. EPND and KL&J will carry out any treatment plans agreed to by NDSHPO in order to avoid or minimize impacts to these sites as applicable.

Therefore, since KL&J's technical report includes sensitive information about the location and character of the five *unevaluated* archaeological sites, EPND is filing a redacted version of this report. All sensitive information has been removed from the public

version (see Exhibit C.1). EPND will supplement its application with the final results of the NDSHPO's findings and conclusions, as deemed appropriate by this agency.

Since conducting the initial corridor surveys, EPND has made some minor route adjustments and identified areas (outside of the original survey corridor) where extra workspace may be needed. The extra workspace areas will require cultural surveys. Presently, KL&J is completing surveys in these areas and will present those results to NDSHPO. EPND will continue to work with consultant KL&J to receive NDSHPO concurrence with their cultural resources findings and recommendations for the protection of historic properties. EPND will provide the ND-PSC with the NDSHPO's concurrence letter its upon receipt.

B.2 WETLAND ASSESSMENT

B.2.a U.S. Army Corps of Engineers ("COE")

EPND has been in communication with the U.S. Army Corps of Engineers (COE)-Omaha District, who has regulatory jurisdiction in the Project vicinity, as well as COE representatives from its regional North Dakota branch offices. An Inter-Agency Coordination Meeting (ICM) was held on April 15, 2010 to discuss the Project, which included COE representatives.

The COE has broad regulatory jurisdiction over construction activities affecting waters of the United States, such as wetlands and waterbodies, which are crossed by the pipeline route. The COE authorizes several classes of construction projects through a Nationwide Permit (NWP) program, if the project has minimal environmental impact, and if the project can meet certain environmental compliance objectives. The COE NWP 12 is specially geared to the construction of utility lines, such as pipelines, which do not result in the permanent loss of greater than ½-acre of waters (wetlands and waterbodies) of the United States.

With the proper construction techniques used in current pipeline projects, the installation of the 56-mile pipeline will result in only temporary impacts to wetlands and waterbodies under the jurisdiction of the COE. A wetland delineation completed by Merjent, Inc. ("Merjent") of Minneapolis, Minnesota determined that wetlands are present within the boundaries of Stanley Station and Terminal site in Mountrail County, and outside the existing fenceline at the Berthold Station and Terminal Facility in Ward County (see Exhibit D.3). No wetlands are present at Beaver Lodge Station. Also EPND commissioned Barr Engineering Company ("Barr") of Duluth, Minnesota to perform a wetland assessment within the existing fenceline of the Berthold Station and Terminal site. Barr determined that a wetland was present within the boundaries of the existing station fenceline (see Exhibit D.2). Both reports

found that no permanent impacts to these wetlands are anticipated as a result of this Project.

Since the initial surveys were conducted, EPND has expanded the Beaver Lodge Station and Terminal boundary. EPND is presently working to complete this additional survey work and will supplement its application filing to the ND-PSC upon completion of the surveys and finalization of the reports.

Based on previous discussion with COE representatives and the fact that no permanent loss of wetlands is anticipated due to the Project, EPND anticipates the COE will authorize the Project under NWP 12. EPND will continue to coordinate with the COE-Omaha District through the permitting process.

B.2.a.(1) Wetland Assessment

Wetland delineation surveys are a key component of the overall wetland program, which involves pre-survey planning in concert with agency consultation, survey coordination, field investigations conducted in accordance with prescribed federal and/or state methodologies, data collection and management, report preparation, and preparation and submittal of permit applications to the COE. The purpose of wetland delineation surveys (and concurrent waterbody surveys) is to gather relevant quantitative, qualitative, and location information to be used during the permitting process and for construction planning.

In September 2010, EPND commissioned a wetland assessment of the Project area. McCain and Associates Inc. ("McCain"), of Bismarck, North Dakota, completed a wetland delineation survey along the proposed route. EPND will be submitting a copy of the wetland delineation reports to COE in its applications for temporary wetland impacts due to pipeline construction as part of its application for coverage under NWP 12. (For a more detailed discussion on wetland impacts and mitigation measures, see Section B.4.b.(8) of the Application for a Route Permit.)

Since conducting its initial survey work, EPND has made certain minor route adjustments and identified certain areas (outside of the original survey corridor) where extra workspace may be required. McCain is working to complete its survey work in these areas; and upon finalizing these reports, EPND plans to file such information with the ND-PSC.

B.2.b U.S. Department of Agriculture, Natural Resource Conservation Service (“NRCS”)

The U.S. Department of Agriculture, Natural Resource Conservation Service (NRCS) administers the Wetland Reserve Program (“WRP”), a voluntary program offering landowners the opportunity to protect, restore, and enhance wetlands on their property. EPND submitted a consultation request with the NRCS to determine if the study area included any lands enrolled in the WRP. In an April 30, 2010 response, the NRCS concluded that there were *no existing WRP easements within the route corridor*, and further, that they did not have *any potential 2010 WRP offers within the route corridor*. NRCS will monitor future applications within the study area for potential conflicts. Unless there are major route revisions that may impact WRP easements, no authorization will be required.

A copy of the correspondence with the NRCS is included herein as Exhibit F.8.

B.3 BIOLOGICAL RESOURCES

B.3.a U.S. Department of Interior, Fish and Wildlife Service (“USFWS”)

EPND initiated consultation with the USFWS for concerns related to federally-listed species and critical habitats that may be affected by the Project, as well as the location of USFWS-administered wetland and grassland easements. In a June 3, 2010 response, USFWS provided comments and recommendations for the Project as it relates to federally protected species and their habitats. A copy of the correspondence with the USFWS is included herein as Exhibit F.1 and further information is described in Section B.2.j of the Route Permit Application.

As described in Section A.3.b.(1) above, the majority of Beaver Lodge Loop pipeline route is co-located with EPND’s existing Line 82 pipeline. In these areas, EPND has existing permanent land easements which are believed to have been acquired prior to USFWS’s wetland and grassland easement programs. EPND is presently evaluating the legal status of its existing easements in comparison with the USFWS wetland and grassland easements. If USFWS easements are identified in areas of the route which is not co-located with Line 82 and where EPND does not have an existing easement, EPND will work with USFWS on preferred crossing methods and/or avoidance measures.

B.3.a.(1) Biological Assessment

To address biological resources concerns that the USFWS identified during agency consultations, EPND commissioned a habitat assessment of the pipeline route in August 2010. McCain completed a species of concern habitat assessment along the

proposed route. (See Exhibit N for a copy of the McCain report and Section B.2.j of the Application for a Route Permit for further detailed information.)

The assessment did not reveal threatened and endangered species or critical habitat areas of concern. Suitable nesting habitat for migratory birds was identified within the study area. The majority of the suitable habitat is located adjacent to wetlands and road crossings, and within portions of the Project that cross native prairies.

EPND will implement mitigation measures to minimize impacts to suitable nesting habitats as described in EPND's EMP (see Exhibit E).

B.3.b North Dakota Game and Fish Department ("NDGF")

EPND initiated consultation with the North Dakota Game and Fish Department ("NDGF") for concerns related to state-listed species and their habitats that may be affected by the Project. In a May 19, 2010 response, NDGF recommended avoiding native prairie, woody vegetation, and wildlife management areas ("WMAs"), and recommended that raptor surveys be conducted. A copy of the correspondence with the NDGF is attached herein as Exhibit F.2, and further information is described in Section B.2.j of the Route Permit Application.

B.3.b.(1) Biological Assessment

EPND commissioned a habitat assessment of the Project area in August 2010 to address biological resources concerns that the NDGF identified during agency consultations. McCain completed a species of concern habitat assessment along the proposed route. (See Section B.3.a.(1) above, and B.2.j of the Route Permit Application for further details.)

B.3.c Raptor Surveys

EPND commissioned a ground survey for tree and ground raptor nests within the survey corridor during the on-site evaluation/habitat assessment completed in August 2010. This survey addressed USFWS and NDGF concerns regarding raptors. No raptor nests were observed during the on-site evaluation. EPND is also proposing to conduct raptor surveys in Spring 2011, prior to construction. Further information is described in Section B.2.j.(1) of the Route Permit Application.

B.4 OTHER AGENCY CONSULTATIONS

Other agencies that EPND has consulted with concerning the Beaver Lodge Loop Project include the following:

B.4.a North Dakota State Water Commission (“NDSWC”)

A desktop review of the route corridor did not identify any sovereign lands within the jurisdiction of the North Dakota State Water Commission (“NDSWC”). EPND submitted a consultation request to the NDSWC on April 27, 2010, and received confirmation in a May 14, 2010 response that “*No Sovereign Lands*” are located within the survey corridor.

A copy of the correspondence with the NDSWC is included herein as Exhibit F.9.

B.4.b North Dakota Parks and Recreation (“NDPR”)

EPND initiated consultation with the North Dakota Parks and Recreation (“NDPR”) Department for concerns related to recreation and biological resources. In a May 20, 2010 response, NDPR confirmed that the Project *does not affect state park lands or lands managed by NDPR’s Land and Water Conservation Fund (“LWCF”)*. NDPR also reviewed their North Dakota Heritage biological conservation database to determine if any current or historic plant or animal species of concern or other significant ecological communities are known to occur within the Project area.

NDPR identified a known occurrence of the state-protected Piping Plover (*Charadrius melodus*), within the study area and provided a map showing the location of this occurrence. Based on the map provided by NDPR, the location appears to be on the outer fringe of the one-mile study area, and will likely not be impacted. NDPR deferred further comment on other species to the USFWS and NDGF.

A copy of the correspondence with the NDPR is included herein as Exhibit F.3, and further information is described in Section B.2.j of the Application for Route Permit.

B.4.c U.S. Department of Interior, Bureau of Reclamation (“BOR”)

A desktop review of the Project did not identify any U.S. Department of Interior, Bureau of Reclamation (“BOR”)-administered lands within the Project study area. EPND submitted a consultation request to the BOR on April 27, 2010 to determine if any BOR-administered land would be impacted by the Project. EPND followed up via a phone (voicemail) on July 7, 2010; however, as of the date of this submittal, an agency response has not been received.

Based on the desktop review and lack of agency response, it is assumed that the BOR does not administer land within the route corridor, and does not have an interest in commenting on the Project.

A copy of the correspondence letter sent to the BOR is included as Exhibit F.4.

B.4.d U.S. Department of Interior, Bureau of Land Management (“BLM”)

EPND submitted a consultation request to the U.S. Department of Interior, Bureau of Land Management (“BLM”) on April 27, 2010, to determine if BLM-administered land would be impacted by the Project. In a May 18, 2010 response, BLM identified one parcel of land located within the Study Area (NW ¼ of NE ¼ of Section 27, Township-156-North, Range-89-West, Mountrail, County), and another parcel of land located in the vicinity of the Project, but not within the Study Area. The BLM parcel located within the Study Area is not directly crossed by the pipeline. A right-of-way permit would be needed from BLM, if BLM-administered parcels were directly crossed; however, as the current alignment does not directly cross this parcel, no authorization from BLM is anticipated.

A copy of the correspondence with the BLM is included herein as Exhibit F.5.

B.4.e U.S. Department of Agriculture, Farm Service Agency (“FSA”)

The U.S. Department of Agriculture, Farm Service Agency (FSA) administers the Conservation Reserve Program (“CRP”) and Grassland Reserve Program (“GRP”). These voluntary conservation programs emphasize the enhancement of plant and animal diversity and improving long-term soil fertility. FSA also addresses concerns relating to designated prime farmland.

With respect to CRP lands, FSA identified 53 fields in Mountrail County that are within the one-mile wide study area (including 8 which are directly crossed); to date, FSA has not provided information on CRP lands within Ward County, despite follow-up requests from EPND on July 7, 2010. FSA is unable to provide specific geographic data regarding these parcels until a signed release from the producer/landowner is obtained. FSA further commented that CRP participants should contact their local FSA office concerning the activity, and that a permanent grass/legume cover will need to be re-established in excavated areas. If buildings or other storage structures are located on CRP lands, the CRP contracts will need to be terminated and refunded. FSA further noted that since the Project is not federally-funded, that no special authorization is needed for work on designated prime farmland.

EPND is unaware of any GRP lands within the route corridor. To date, FSA has not provided any comments or addressed any concerns related to GRP lands. EPND

followed up with Jim Jost of FSA on July 7, 2010, to confirm no GRP lands are located within the route corridor. Based on the desktop review and lack of agency response, it is assumed that FSA does not administer GRP lands in the study area.

A copy of the correspondence with the FSA is included herein as Exhibit F.6. Further discussion regarding CRP lands and impacts to prime farmland is provided below in Sections B.4.a.(2)(ii) and B.4.b.(3) of the Route Permit Application.

B.4.f North Dakota State Lands Department (“NDSL D”)

Merjent performed a desktop review of the Project and identified that four parcels of North Dakota School Trust Land (“NDSTL”), administered by the North Dakota State Land Department (“NDSL D”), are located within the one-mile wide study area and crossed by the proposed pipeline route. Merjent, on behalf of EPND, submitted a consultation request to the NDSL D on April 27, 2010, and received confirmation in an email dated May 7, 2010, agreeing with its findings (see Exhibit F.7). However, since that time, it has been discovered that only three parcels of School Trust Lands are located within the one-mile study area and crossed by the proposed pipeline route as shown on Table 4 below (see Exhibit J.1 to view location of NDSTL on Exclusion and Avoidance maps)⁵.

Table 4					
North Dakota School Trust Lands Crossed by Proposed Pipeline Route					
Exhibit J.1 Sheet No.	Mile Post	Section	Township	Range	County
7	MP 39	36	156N	93W	Mountrail
Shown on 8 & 9	MP 45	36	156N	94W	Mountrail
10	Between MP 51 & MP 52	36	156N	95W	William

⁵ Inadvertently, the NDSTL located in Section 36, Township 156 North, Range 92 West was listed on Table 2 of Merjent’s April 27, 2010 correspondence email. However, this NDSTL is located outside of the one-mile study area, and therefore not impacted by the proposed Project (see Exhibit J.1, Sheet No. 6). EPND apologizes for this error.

NDSLDD provided further information on applying for a right-of-way permit for crossing these lands. EPND submitted an online application for a permit to cross these lands. Permit issuance is pending.

A copy of the submitted application to NDSLDD is included herein as Exhibit O.

B.4.g North Dakota Department of Health (“NDDH”)

Pursuant to North Dakota Administrative Code 33-15-14, EPND will be required to obtain air permits from the North Dakota Department of Health (“NDDH”) for construction of new storage tanks and associated equipment being proposed at each of its Beaver Lodge, Stanley and Berthold Station and Terminal sites (see Sections A.3.b.(7)(i), (ii), and (iii)). EPND plans to submit its applications prior to the initiation of its construction activities at each location. Prior to placing these tanks into service, a complete inspection of each tank will be performed to verify information used for estimating emissions and documenting compliance with the permits. EPND will provide a copy of the NDDH permits to the ND-PSC prior to the commencement of any construction activities.

**APPLICATION FOR CORRIDOR CERTIFICATE
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.

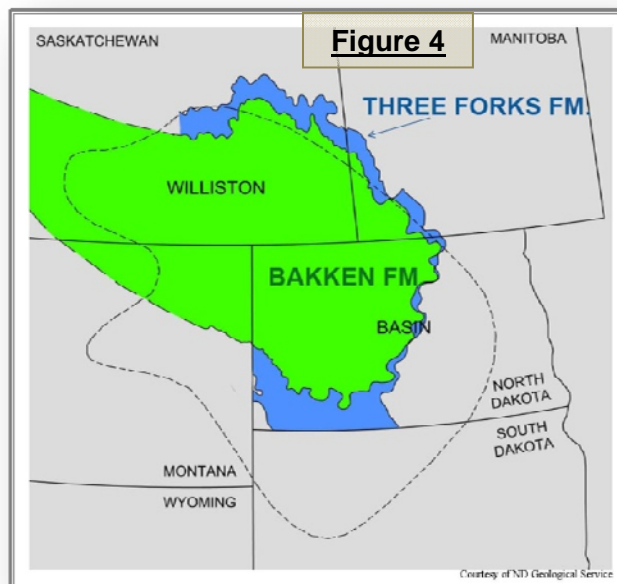
C.1.a Planned Use and Purpose

As the demand for the crude oil production from the Williston Basin increases so does the demand for additional pipeline capacity on EPND's North Dakota pipeline system. As previously stated, EPND has been responding to these market demands with the execution of numerous phased-in expansion projects since 2005, and has doubled its pipeline capacity into Clearbrook in the last two years with the completion of the 51,600 bpd expansion, which optimized its export capacity, bringing the total export pipeline capacity to 161,600 bpd into Clearbrook. However, this additional capacity is now full. As the demand for export capacity rises on EPND's pipeline system, potential capacity constraints on its system between Beaver Lodge and Berthold will likely lead to apportioned nominations on the system.

In response, EPND has developed a series of potential projects collectively named the Bakken Program ("Program"). This Program, comprised of independent, yet complementary projects, is designed to incrementally provide export capacity in strategic locations along EPND's pipeline system to meet the current and future transportation requirements of its shippers in the Williston Basin, a prolific producing region.

As production activity rises in Williams, Mountrail, Dunn and McKenzie Counties so has the demand for EPND to increase its pipeline capacity on this regional segment of its pipeline system. As previously noted, the proposed Beaver Lodge Loop Project is the next project in the Bakken Program, designed to add 145,800 bpd of new pipeline capacity between Beaver Lodge and Berthold to accommodate the new and increasing crude oil volumes being delivered to EPND from the Bakken and Three Forks Formation receipt locations in these counties. This Project complements the Bakken Pipeline Project US (Docket No. PU-10-612), because it will serve as a feeder line to transport such volumes to Berthold. There, shippers will have access to a wide range of refinery and marketing hubs via EPND's existing pipeline system to Clearbrook or its newly expanded Line 26 to Cromer, Manitoba via its Canadian counterparts' pipeline systems and access to the Enbridge Mainline System.

Supply: The Williston Basin spans parts of western North Dakota, eastern Montana and southeast Saskatchewan and contains the Mississippian Bakken and Devonian Three Forks formations among a number of other producing horizons (see Figure 4). Producers in this region have experienced unprecedented success with the recent improvements in drilling technology to extract crude oil from tight and dense formations. The active drilling rig count in North Dakota has risen from 47 in March 2009 to 144 in September 2010, which is a 300 percent increase in less than 18 months. North Dakota is the fourth largest crude oil producing state in the country with only Texas, Alaska and California producing more on-shore crude oil on a daily basis, according to the North Dakota Petroleum Council.



The oil production in the Bakken Formation continues to rise exponentially from 26 million barrels in 2007 to 215 million barrels in 2009, according to reports published by the U.S. Geological Service (“USGS”). Furthermore, in May 2010, the State of North Dakota released reserve estimates with a probability of 2.1 billion barrels for the Bakken and 1.9 billion barrels for the Three Forks formations *in North Dakota only* (see Table 5).

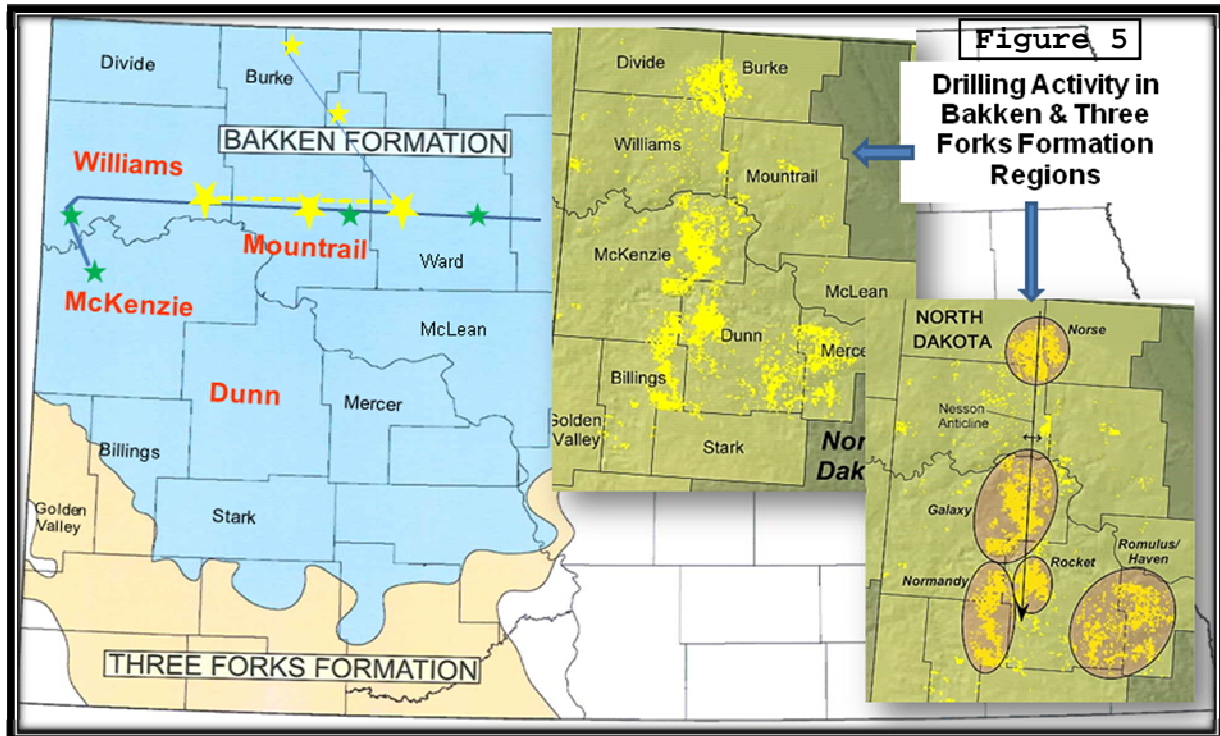
	2010 Three Forks	2008 Bakken	Total
Original Oil in Place	20 billion	149 billion	169 billion
Expected Ultimate Recovery	1.9 billion	2.1 billion	4.0 billion

As seen in Table No. 6 below, North Dakota's daily average oil production in the Bakken Formation has grown significantly from 123,662 bpd in January 2007 to 321,042 bpd in July 2010, rising approximately 280 percent in less than 48 months (see quarterly *The Pipeline Publication* reports posted on the North Dakota Pipeline Authority's website at www.pipeline.nd.gov.) The production volumes are expected to continue to rise in this region as drilling activities continues to increase.

Table 6						
North Dakota's Average Daily Oil Production (bpd) From Bakken Formation						
	Jan	Feb	March	April	May	June
2010	236,114	261,179	277,418	288,435	298,060	314,477
2009	187,821	192,272	195,798	196,701	206,078	215,074
2008	137,644	137,837	143,776	150,694	156,365	166,190
2007	115,028	116,713	118,103	118,679	120,536	122,377
	July	Aug	Sept	Oct	Nov	Dec
2010	321,042					
2009	227,879	232,367	238,173	240,042	245,854	242,107
2008	172,939	177,740	188,246	203,773	215,717	202,347
2007	123,662	124,713	127,070	129,255	130,692	136,010

Currently, eastern Montana produces approximately 65,000 bpd. EPND's Trenton and Alexander, North Dakota Stations receives approximately 40% of its 161,600 bpd delivered into Clearbrook Terminal from eastern Montana producers. Through a series of pipeline expansion projects since 2005, EPND has provided eastern Montana producers with increased capacity to its pipeline system and market access throughout Petroleum Administration of Defense Districts ("PADD") (see Exhibit L for a pictorial view of the defense districts). However, as previously stated that pipeline capacity to Clearbrook is now full, and routinely under apportionment.

Generally, forecasts show that the total U.S. Williston Basin Bakken and Three Forks production (eastern Montana combined with North Dakota) is expected to exceed 350,000 bpd by mid-2010 and approach a sustainable minimum production rate of 400,000 bpd as early as 2012. Numerous other production forecasts estimate that production may reach 650,000 bpd.



Therefore, as seen on Figure 5 above, EPND's Project is strategically located in the heart of the Bakken and Three Forks Formations' current and future production region, including Williams, Mountrail, McKenzie and Dunn Counties. As proposed, the new 16-inch diameter pipeline will serve as a feeder line to transport 145,800 bpd of new and increasing crude oil volumes to be received at EPND's Beaver Lodge and Stanley Stations and relayed to its Berthold Station and Terminal. From there, EPND shippers will have options for market access as described in this application. With the steady increase in Bakken production as shown on Table 6 of this application, EPND's shippers' needs dictate that this Project be completed to meet their current and future transportation requirements. In order to avoid a negative price differential on the Williston Basin crude oil markets as was experienced in 2006, this incremental pipeline capacity, connected to a variety of refinery hubs in the United States, is necessary to prevent or limit the level of price disparities between major crude oil marketing hubs.

For all the reasons stated herein, EPND respectfully requests that the Commission find the proposed Project in the public's interest and issue a Certificate of Corridor Compatibility as sought herein.

C.1.b Future North Dakota System Expansion(s)

EPND 's long term planning to better serve its shippers' increasing pipeline capacity requirements is an ongoing effort requiring EPND to work closely with its shippers and assess various forecasts of production activity. As proposed herein, EPND plans to expand its mainline capacity through the expansion of its system between EPND's existing Beaver Lodge Station in Williams County, North Dakota to its existing Berthold Station and Terminal in Ward County, North Dakota. This Project is part of a series of independent, yet complementary, projects in the southwest region of EPND's pipeline system, designed to meet the increasing demands for additional pipeline capacity in the Bakken and Three Forks producing regions.

MEDIUM TERM PLANNING:

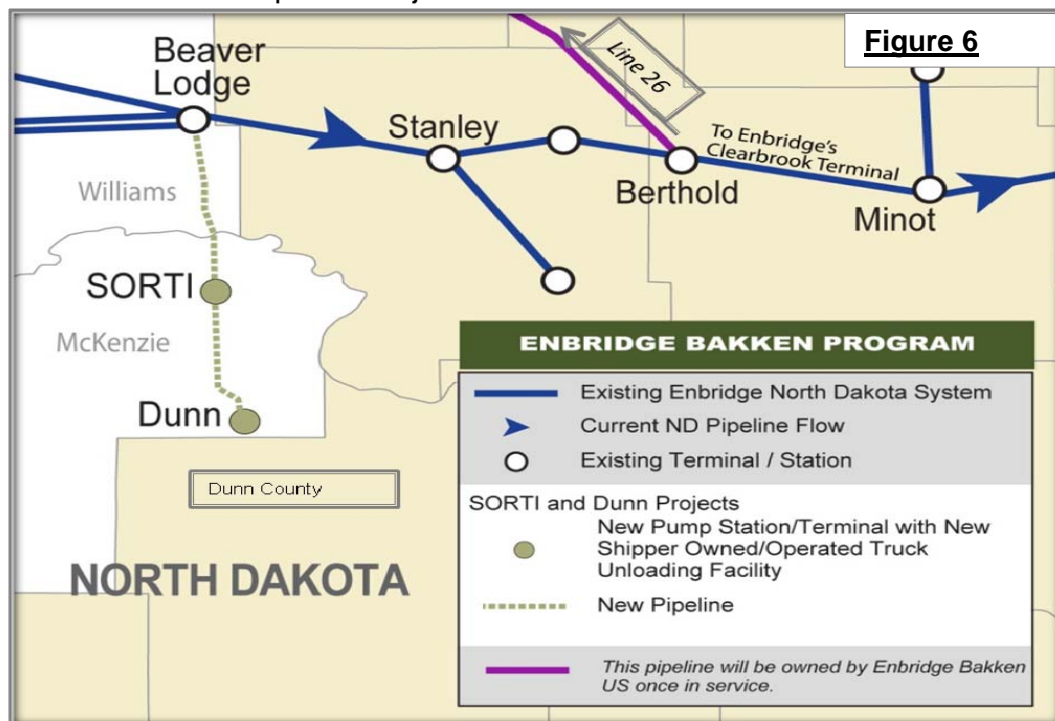
As previously described, the Bakken Program is a series of separate projects designed to respond to specific transportation needs to add capacity connected to a broad array of refinery hubs in the United States. This Program is currently in the medium term planning horizon by EPND and includes:

Bakken Pipeline Project US:

As filed on November 5, 2010 in Docket No. PU-10-612, EPND plans to increase the export pipeline capacity of its existing Line 26, which extends in a northerly direction from Berthold, North Dakota to the international boundary between the U.S. and Canada. This expansion will require EPND to replace a 11-mile long segment of its existing Line 26, and install two new, greenfield pumping stations. One pump station will be located near Kenaston, Ward County, North Dakota and the other station will be located near Lignite, Burke County, North Dakota. Finally, EPND will also make certain station modifications at its existing Berthold Pump Station and Terminal in Ward County as part of the Project. As proposed, this Project will add an incremental 120,800 bpd of export pipeline capacity to the existing 25,000 bpd capacity of Line 26. As a result, EPND's shippers receive a timely and cost effective solution for long-haul transportation to move up to 145,800 bpd of Bakken production to the refinery and marketing hubs in the Midwest and beyond via Enbridge affiliated pipeline systems.

SORTI-Dunn Pipeline Project:

EPND has also developed two new pipeline projects commercially known as the SORTI and Dunn Pipeline Projects.



As shown on Figure 6, these individual projects jointly form one contiguous 45-mile pipeline consisting of 8-inch and 10-inch diameter pipe that will transport volumes from the production areas south of the Missouri River and Lake Sakakawea in Dunn and McKenzie Counties to EPND's existing Beaver Lodge Terminal in Williams County, North Dakota. From Beaver Lodge, such volumes will have access to EPND's new proposed Beaver Lodge Loop line (as described above) or its existing mainline system for further transportation and access to other Enbridge pipelines for movement of such volumes to refineries and marketing hubs in the Midwest and beyond. EPND plans to file both projects concurrently with the ND-PSC as a combined Corridor Certificate and Route Permit application, and shall be referred to therein as the SORTI-Dunn Pipeline Projects. The SORTI-Dunn Projects offer additional service to this producing area with initial capacity to deliver 67,000 bpd of crude oil into the EPND system. EPND intends to file its consolidated Corridor Certificate and Route Permit Application with the ND-PSC in February 2011.

Other

Most recently, EPND announced the termination of its segregated sour transportation service, which will be effective on February 1, 2011. This change in service will improve the operational efficiency of EPND's pipeline capacity from Berthold to Clearbrook, enabling EPND to increase the barrels being

transported from 161,600 bpd to an estimated 185,000 bpd, an approximate incremental pipeline capacity increase of 23,400 bpd.

LONG TERM FUTURE PLANNING:

Bakken Pipeline Project US Phase 2:

With certain upgrades to EPND's Bakken Pipeline or Line 26, EPND has the ability to increase its pipeline capacity by 180,000 bpd. Thus, EPND could provide an ultimate pipeline capacity of 325,000 bpd on Line 26 to Bakken producers and shippers. The commercial development of this additional expansion could begin as early as mid-2011.

Beaver Lodge Expansion:

Additionally, as shippers' needs dictate, the design of the Beaver Lodge Expansion Project allows for future expandability to accommodate an Ultimate Annual Capacity of 204,000 bpd through the addition or modification of existing EPND pumping stations. Plans for such an expansion have not been approved and there is no active consideration of such an expansion. However, EPND and its customers are continuously assessing demand and supply patterns, as well as various other pipeline infrastructure development projects, to determine if and when future expansions or changes are needed in the EPND's North Dakota Pipeline System to meet market needs.

SORTI-Dunn Expansion:

The design of the SORTI-Dunn Projects allows for future expandability up to an Ultimate Annual Capacity of 111,000 bpd. As dictated by shippers' needs, this expansion would be accomplished through the addition of new pumping facilities and modification at existing EPND's pump station sites. EPND and its customers are continuously assessing demand and supply patterns, as well as various other pipeline infrastructure development projects, to determine if and when future expansions or changes are needed in the EPND's North Dakota Pipeline System to meet market needs. Plans for such an expansion have not been approved and there is no active consideration of such an expansion at this time.

Other:

A longer term option for additional pipeline capacity includes a new pipeline from Berthold to Clearbrook should demand for additional pipeline capacity exceed the medium and long term planning described above. This "Loop to Clearbrook" could provide another 250,000 bpd. Plans for such an expansion have not been approved and there is no active consideration of such an expansion at this time.

C.2 ALTERNATIVES TO THE PROPOSED FACILITY

EPND has performed a reasonable and defensible alternative analysis that involves consideration of environmental, engineering and economic factors in a multi-disciplinary and iterative fashion. Thus, discussed below are alternatives to the Beaver Lodge Loop Project.

C.2.a No Action Alternative

In light of the overall increase in Williston Basin production, the requirement by shippers to increase pipeline capacity and the current apportionment that is being experienced on the EPND's North Dakota System today, a "no action" alternative is unacceptable to EPND and its shippers.

Alternative transportation options to the Beaver Lodge Loop Project are limited and would result in more impacts than the proposed pipeline expansion project. The only other alternatives for shippers delivering into the North Dakota pipeline system would be to (1) reduce production, if transport options out of North Dakota are capacity constrained; (2) truck or rail all or portions of the increased Bakken production to refineries outside North Dakota with attendant problems noted in the footnotes below; or (3) transport crude on non-Enbridge pipelines that are also at capacity, and thus, would require new pipe or facilities. While pipeline expansions have been proposed or are under consideration by other companies, no project can provide cost-effective incremental capacity in the near term as proposed in the Project.

C.2.b Trucking Alternative

Currently, due to the lack of pipeline capacity in North Dakota, there are some volumes of crude oil that are transported by truck to bypass constrained pipelines. As demonstrated herein, the trucking alternative significantly overburdens public roadway capacity, especially considering that trucks require round-trip routing. Also, the reliability of this alternative in northern climates is compromised by periodic restrictions in truck traffic due to winter storms and spring road restrictions or other weather related or capacity availability restrictions. 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 for short or long distances. Currently, there is insufficient tanker trailer truck capacity to transport the incremental 145,800 barrels of crude oil per day to refinery hubs. However, should the truck capacity issue be resolved, EPND or its shippers would need to expand truck loading/unloading facilities at EPND's Berthold Station and Terminal Facility in Ward County to allow receipt of such volumes into EPND's pipeline system. The potential in-service date of additional trucking, road and off-loading capacity is not known.

- a discussion of the design and the geographical area affected
In order to transport the incremental 145,800 bpd of crude oil proposed by EPND, a fleet of trucks would be required as detailed below:
- computation of trucking requirements
Crude oil volumes = 145,800 bpd
Per truck capacity = 200 barrels per truck
Number of trucks required = $145,800 / 200 = 729$ trucks per day
Assume each truck requires loading, in-transit full (1 day), in-transit empty (1 day), and unloading time
Number of trucks in transit = $729 \times 1 \text{ day} = 729$ trucks
Number of trucks returning empty = $729 \times 1 \text{ day} = 729$ trucks
20% of the in-transit trucks loading and unloading = 146 trucks
Total truck requirements = $729 + 729 + 146 = 1604$ trucks
(ignoring scheduled/unscheduled down time)
Number of drivers required for 1 day round-trip, including loading/unloading = $1604 \times 1 \text{ driver/truck} = 1604$ drivers
Number of drivers required for 1-day round-trip including loading/unloading = $1604 \times 1 \text{ driver/truck} = 1604$ drivers

In order to facilitate this operation, significant truck loading and offloading terminal facilities would have to be constructed at EPND's Beaver Lodge and Berthold Stations. In addition, it is likely that substantial upgrades and ongoing maintenance would be required (at public expense) to the connecting roadways along the entire route.

- an estimate of the in-service date
EPND does not have an estimate of the time required to acquire the trucking fleet described above, how long it would take to attract and train the associated drivers, nor how extensive the roadway upgrade program would be.
- a discussion of the method of operation
This operation would be highly labor-intensive, with a significant workforce required at both terminal locations, to allow for the constant loading and offloading requirements. This option would require a significant driver pool to maintain the constant movement of the entire truck fleet.
- its costs
Based on the North Dakota Petroleum Council's "Williston Basin Crude Oil Transportation Bottleneck White Paper" dated March, 2006, the approximate transportation costs to move 145,800 bpd by truck would range from \$6.00 to \$10.00 per barrel. Using the United States Department of Labor's Consumer Products Index Inflation Calculator (<http://data.bls.gov/cgi-bin/cpicalc.pl>), the 2010 rates to move those same barrels would range from \$6.50 to \$10.83 per

barrel. Therefore, the estimated transportation costs to truck 145,800 bpd would range between approximately \$345.9 and \$576.3 million dollars per year (ignoring the cost of new vehicles and infrastructure facilities necessary).

- its economic life

With mileage that the trucks would incur in steady service, EPND estimates that the economic life of a truck would not exceed 4 to 5 years. The truck loading and offloading terminals would have an estimated economic life of 25 years. EPND does not have an assessment of the impact that this amount of incremental truck traffic would have on the various roadways.

- its reliability

This operation would be inherently much less reliable than the Beaver Lodge Loop Project, as truck traffic is affected by weather conditions, mechanical failure, manpower (driver shortages), road maintenance or closures. Furthermore, according to the National Transportation Safety Board, trucks have a significantly higher rate of accidents affecting driver and public safety than compared to pipelines (see Table 7 of the enclosed Application for a Route Permit). Trucking cannot compete with pipelines for volumes over long distances given the physical limitations of trucks and unloading facilities that are required to sustain operations of this nature. Therefore, this alternative was not further considered.

C.2.c Rail Alternative

Currently, there is insufficient rail tanker car capacity to transport the incremental 145,800 bpd to Berthold, North Dakota. The rail tanker car alternative would require the construction (by EPND or its shippers) of rail car loading and off-loading facilities. Also, the construction of a new lateral above ground rail service poses additional risk and impact to landowners and the public. While rail tanker cars are a vital part of the short-haul distribution network for crude oil, pipelines are a safer and more economic transportation 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 restriction in truck traffic to deliver to rail due to winter storms and spring road restrictions or other weather-related or capacity availability restrictions.

- a discussion of the design and the geographical area affected
In order to transport 145,800 bpd of heavy oil, a fleet of rail cars would be required as detailed below:
- computation of rail car requirements
Crude oil volumes = 145,800 bpd
Rail car capacity = 600 barrels per rail car
Tank cars required = $145,800/600 = 243$ rail cars per day
Estimated time to move each rail car from Beaver Lodge Station to Berthold Station and Terminal Facility
(various carriers and through various rail assembly yards) = 1-2 days
Number of cars in transit = 243×2 days = 486 cars
Number of cars returning empty = 243×2 days = 486 cars
20% of the in-transit cars loading and unloading = 97 cars
Total tank car requirements = $486+486+97 = 1069$ rail cars
(ignoring scheduled/unscheduled down time)

Approximately 1069 rail cars would have to be in route each day, making the round trip between those two locations in approximately 2 days. In order to facilitate this operation, significant spur lines, rail sidings, and terminal facilities would have to be constructed at Beaver Lodge and Berthold Stations. In addition, substantial upgrades and ongoing maintenance would be required to the connecting railways.
- an estimate of the in-service date
EPND believes that it is impossible for terminal facilities at both Beaver Lodge and Berthold Stations to be constructed on the same timeline as the Beaver Lodge Loop Project or the timeline required to meet the production increases. Additionally, EPND does not know if the number of rail cars required is available or the time that would be required to manufacture them. Moreover, EPND does not have an estimate of the time required to construct the necessary upgrades associated with the railway infrastructure.
- a discussion of the method of operation
This operation would be highly labor-intensive, with a significant workforce required at both terminal locations to allow for the constant loading and offloading requirements and rail car operation.
- its costs
Based on the North Dakota Petroleum Council's "Williston Basin Crude Oil Transportation Bottleneck White Paper" dated March, 2006, the approximate transportation costs to move 145,800 bpd by rail would range from \$6.00 to \$10.00 per barrel. Using the United States Department of Labor's Consumer Products Index Inflation Calculator, (<http://data.bls.gov/cgi-bin/cpicalc.pl>), and the 2010 rates to move those same barrels would range from \$6.50 to \$10.83

per barrel. Therefore, the estimated transportation costs would range between approximately \$345.9 and \$576.3 million dollars per year (ignoring the cost of new rail cars and infrastructure facilities necessary).

- its economic life
With mileage that the cars would incur in steady service, the applicant estimates that the economic life of a rail car would not exceed 10 to 15 years. The rail loading and offloading terminals would have an estimated economic life of 25 years.
- its reliability
This operation would be inherently much less reliable than the Beaver Lodge Loop Project. The entire operation would be subject to weather related delays, delays caused by scheduling conflicting rail traffic, and a significant mechanical/maintenance requirement exposure based on the number of rail cars involved in this operation.

C.2.d Alternative EPND Pipeline Route

The preference for route selection was to optimize EPND's existing pipeline route from Beaver Lodge Station in Williams County to Berthold Station in Ward County, by paralleling its Line 82 pipeline wherever practicable. The goal in selecting this route was the ability to utilize existing pipeline right-of-way, station yards, associated station facilities and power access to the extent possible, and to minimize environmental impacts, reduce overall construction costs, and ensure the constructability of the potential route alignment.

While route variants were minimized to the extent practicable, a number of considerations were evaluated when determining whether a deviation from the existing Line 82 was prudent. The considerations that EPND used as its criteria for route variances included, but were not limited, to the following: poor waterbody crossing points or alignments, road bore staging areas located within wetlands, improvement of road crossing angles, landowner concerns, congested utility corridors and/or facility encroachments, and avoidance of environmentally sensitive areas when feasible.

After evaluating the route selection for this Project, EPND determined that several small route variants will be necessary to avoid encroachments near the existing pipeline or to avoid certain land features. For more detailed information on the route variances, see Table 9 in Section B.4.c.(9) of the Route Permit, which is enclosed as part of this combined application.

C.2.e Alternative Pipeline Design/Size

Based on the crude petroleum forecast and discussions with shippers and producers, EPND determined that an annual capacity of 145,800 bpd would be required and sufficient to meet shippers' transportation requirements. The alternatives examined with respect to sizing this Project efficiently and cost-effectively to provide 145,800 bpd of crude petroleum annual capacity included 12-inch and 16-inch diameter pipelines. It was determined that the 16-inch design provides the most efficient and cost effective combination of capital cost and pumping horsepower requirements for the required capacity and for future expansions to meet shippers' transportation needs (see Table 1 for ultimate design capacity).

C.2.f A summary of the conclusions reached with respect to the alternative and the reason for its rejection

Based on the forecast of demand and supply for crude oil discussed in Section C.1 (Needs Summary), EPND determined and shippers have supported the need to construct the Beaver Lodge Loop Project, as proposed herein, to meet the increasing demand for additional pipeline capacity in the Williston Basin region. As previously stated, the alternative transportation options are limited. Alternative modes of transportation, such as trucking and rail options discussed in Sections C.2.b and C.2.c above, are cost-prohibitive or impose higher public and environmental costs than the Project proposed herein.

Therefore, EPND has concluded that this Project provides a cost effective and efficient method that will:

- provide a long-term transportation solution for moving Bakken production to U.S. refineries and marketing hubs;
- increase the pipeline capacity from Beaver Lodge to Berthold to meet the current and future transportation requirements of its shippers;
- help reduce the current reliance on long haul truck deliveries and rail export options; and
- reduce the transportation costs borne by Williston Basin producers who were required to resort to non-pipeline transport options, allowing their savings to be immediately re-directed toward the development of the oil and gas resources in the State, resulting in additional economic benefits to North Dakota.

As proposed, this Project minimizes environmental and landowner impacts to the extent possible and, when integrated with the existing EPND System, provides the safest, most efficient and cost effective alternative to bridge the gap between the growing demand for crude oil supplies in the Midwest and the increased and reliable

domestic supplies from North Dakota and Montana. Thus, all other alternatives discussed herein were rejected.

C.3 STATEMENT CONCERNING DEVIATION FROM MOST RECENT 10-YEAR PLAN

EPND's latest filed 10-year plan with the ND-PSC is incorporated herein as Exhibit G. At the time of filing, EPND did anticipate the need for the proposed Project as disclosed in Schedule H of this plan.

APPLICATION FOR CORRIDOR CERTIFICATE
SECTION D
LOCATION

D.1 STUDY AREA

EPND defined its study area as a one-mile wide corridor centered on the proposed pipeline route. Section 69-06-04-02.1.b. of the North Dakota Administrative Code ("NDAC") requires that the width of the corridor for the proposed pipeline be at least 10% of its length, but not less than 1 mile wide and not greater than 6 miles wide unless approved by the Commission. The proposed Project, therefore, requires a 5.6-mile-wide study area. EPND, however, is requesting that the Commission reduce the width of the corridor to 1 mile, centered on the proposed pipeline. As the proposed pipeline expansion is adjacent to an existing portion of the EPND system, this one-mile study area should be sufficient to allow the Commission to evaluate the factors addressed in Chapter 49-22-09 of the North Dakota Century Code (see Section B.2 of the Route Permit Application for further discussion of these factors).

EPND conducted a desktop analysis consisting of mapping, GIS, and internet research, and then completed agency consultations over the one-mile wide study area (see Section B of the Route Permit Application). In addition, cultural resource field surveys, biological and wetland/waterbody field surveys were conducted, generally on an approximate 250-foot-wide survey corridor, along the proposed route within the one-mile wide study area. However, EPND has widened its survey corridor in certain locations to address any known environmental and encroachment issues (see route maps enclosed herein as Exhibit H).

D.2 MAP OF PROPOSED CORRIDOR

This Application is a Consolidated Application for a Corridor Certificate and Route Permit. Maps showing the location of exclusion and avoidance areas in the area of the corridor are attached as Exhibit J.1.

D.3 RELATIVE VALUE OF EVALUATION CRITERION

This Application is a Consolidated Application for a Corridor Certificate and Route Permit. The relative value of evaluation criterion is discussed in Sections B.4, B.5, and B.6 of the Route Permit portion of this Application.

D.4 CRITERIA TO BE EVALUATED

This Application is a Consolidated Application for a Corridor Certificate and Route Permit. The criteria to be evaluated are discussed in Sections B.4, B.5, and B.6 of the Route Permit portion of this Application.

D.5 GENERAL MITIGATIVE MEASURES TO BE TAKEN

Mitigation measures to minimize adverse impacts of the proposed Project are identified throughout this Consolidated Application for a Corridor Certificate and Route Permit. In addition, EPND has developed an EMP for this Project (see Exhibit E). The EMP provides a more detailed discussion of the guidelines and mitigation measures that will implement during this Project. It was developed based on EPND corporate experience implementing best management practices during construction of pipelines and associated station facilities.

In addition, EPND has developed a Spill Prevention, Control and Countermeasure ("SPCC") Plan that describes planning, prevention and control measures to minimize impacts of project-related spills. (See Exhibit I). The EPND EMP and SPCC Plan are comprehensive, controlling documents that will be included in contract specifications.

D.6 QUALIFICATIONS OF PERSONS CONTRIBUTING TO THE STUDY

D.6.a Paul Meneghini

Supervisor, Major Projects (US)

Degree: BS, Civil Engineering, Michigan Technological University, Houghton, Michigan.

MBA, Environmental Management, University of St. Thomas, St. Paul, Minnesota.

Experience: 16 years experience in environmental and regulatory permitting and construction oversight compliance.

Other Training and Licenses: Professional Engineer – Minnesota.

D.6.b Angela Ronayne

Senior Analyst, Merjent, Inc.

Degree: BS, Civil Engineering, University of Minnesota, Twin Cities.

Experience: 12 years experience in pipeline environmental and regulatory compliance.

Other Training and Licenses: Professional Engineer – Minnesota.

D.7 MAPS

D.7.a Map of Evaluation Criteria within Study Area

EPND encloses herewith as Exhibit B, its station plot plans, topographical maps and aerial maps for the station facilities proposed herein. Also enclosed herewith as Exhibit H are the route maps showing the location of the new proposed 56-mile transmission line. County maps of the proposed Project are enclosed herewith as part of Exhibit H.

D.7.b Mylar Maps of Study Area

Mylar maps have not been included with this application, because this map producing process is no longer in use.