

**CONSOLIDATED APPLICATION
CERTIFICATE OF CORRIDOR COMPATIBILITY AND ROUTE
PERMIT**

Alliance Sales Line Project

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ACRONYMS AND ABBREVIATIONS

API	American Petroleum Institute
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
BMPs	Best Management Practices
BTU	British thermal units
CFR	Code of Federal Regulations
Commission	North Dakota Public Service Commission
ESA	Endangered Species Act
GIS	Geographic Information System
HDD	Horizontal Directional Drilling
LMS	Liberty Midstream Solutions
MBTA	Migratory Bird Treaty Act
MMCFD	million cubic feet per day
NDAC	North Dakota Administrative Code
NDCC	North Dakota Century Code
NGL	natural gas liquids
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
NWP	Nationwide Permit
OSHA	Occupational Safety and Health Administration
PEM	palustrine emergent
PHMSA	Pipeline Hazardous Materials Safety Administration
PSC	Public Service Commission
Project	Alliance Sales Line Project
ROW	Right-of-Way
SCF	standard cubic feet
SHPO	State Historic Preservation Office
SWCA	SWCA Environmental Consultants, Inc.
SWPPP	Storm Water Pollution Prevention Plan
UDP	Unanticipated Discovery Plan
USACE	United States Army Corps of Engineers
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WBI	Williston Basin Interstate

CHECKLIST FOR COMBINED CERTIFICATE OF CORRIDOR COMPATIBILITY AND ROUTE PERMIT APPLICATION

Authority	Description	Section(s)
Chapter 49-22.1 CENTURY CODE		
49-22.1-06	Application for a Certificate for a Corridor	
1.a	Description of size and type of facility	1.0, 8.0
1.b	Summary of any studies of environmental impacts	13.0
1.c	Need for the facility	3.0
1.d	Site for energy conversion facility	N/A
1.e	Preferred transmission (pipeline) corridor	2.2
1.f	Analysis of merits and detriments of facility location	2.2, 12.0
1.g	Mitigating measures	19.0
1.h	Corridor evaluation pursuant to 49-22.1-09 and 49-22.1-03	17.0, 16.1, 16.2
49-22.1-07	Application for Route Permit	
1.a	Description of size and type of facility	1.0, 8.0
1.b	Description of the location	2.0
1.c	Route evaluation relative to 49-22.1-09 and 49-22.1-03	17.0, 16.1, 16.2
1.d	Mitigating measures	19.0
1.e	Right-of-way preparation, construction, and reclamation	10.0
1.f	Statement identifying how: 1) landowners informed of right-of-way acquisition; and 2) how landowners will be compensated	9.0
1.g	Other relevant information	18.0
49-22.1-09	Factors to be considered in evaluating corridor and route applications	17.0
1	Research and investigation into effects of the project on public health, welfare, natural resources, and the environment	17.1
2	Effects of transmission technology and design to minimize adverse effects	17.2
3	Potential beneficial uses of waste energy from energy conversion facility	17.3
4	Unavoidable adverse direct and indirect environmental effects	17.4
5	Corridor or route alternatives developed during the hearing which minimize adverse effects	17.5
6	Irreversible and irretrievable commitments of natural resources if designated	17.6
7	Direct and indirect economic impacts of the facility	17.7
8	Existing plans for other developments at or in the vicinity	17.8
9	Effect of project on scenic areas, historic sites and structures, paleontological and archaeological sites	17.9
10	Effect of route on unique biological areas	17.10
11	Problems raised by federal, state, or local entities	17.11

Authority	Description	Section(s)
ADMINISTRATIVE CODE – ARTICLE 69-06		
69-06-05-01	Application for a Transmission Facility Permit	
2.a.(1)	Type of facility proposed	1.0
2.a.(2)	Purpose of facility	3.0
2.a.(3)	Technology to be deployed	5.0
2.a.(4)	Type of product to be transmitted	4.1
2.a.(5)	Source of product being transmitted	4.2
2.a.(6)	Final destination of product being transmitted	4.3
2.a.(7)	Size and design detail and any alternative size and design	8.0
2.a.(7)(a)	The width of right-of-way	8.1.1
2.a.(7)(b)	The approximate length of facility	8.1.2
2.a.(7)(c)	The estimated span length for electric facilities	N/A
2.a.(7)(d)	The anticipated type of structure for electric facilities	N/A
2.a.(7)(e)	The voltage for electric facilities	N/A
2.a.(7)(f)	The requirement for and general location of any associated facilities	8.2.1
2.a.(7)(g)	The estimated distance between pipeline surface structures	8.2.2
2.a.(7)(h)	The pipe size	8.1.3
2.a.(7)(i)	The maximum design for pipeline operating pressure and temperature	8.1.4
2.a.(7)(j)	The maximum design pipeline flow rate	8.2.2
2.a.(7)(k)	The number and general location of compressor or pumping stations	8.2.3
2.b	Time schedule	7.0
2.b.(1)	Obtaining the certificate of corridor compatibility	7.1
2.b.(2)	Obtaining route permit	7.2
2.b.(3)	Completing right-of-way acquisition	7.3
2.b.(4)	Starting construction	7.4
2.b.(5)	Completing construction	7.5
2.b.(6)	Testing operations	7.6
2.b.(7)	Commencing operations	7.7
2.c	A copy of each evaluative study or assessment of environmental impact of the proposed facility submitted to the agencies listed in section 69-06-01-05 and each response received	Appendix D, F, and G
2.d	Need for facility	3.0
2.e	Description of alternatives	12.0
2.f	Corridor width	2.2, 9.1.1
2.g	Study area to enable the Commission to evaluate the factors in the Century Code section 49-22-09	2.1, 17.0
2.h	Discussion of factors in Century Code section 49-22-09 to air Commission's evaluation	17.0

Authority	Description	Section(s)
2.i	A discussion of the applicant's policies and commitments to limit the environmental impact of its facilities, including copies of board resolutions and management directives	19.0
2.j	Map of criteria that led to route location	Appendix A
2.k	Discuss relative value of each criteria and how the location was selected; how operation will affect criteria	17.0
2.l	Mitigating measures	19.0
2.m	Qualifications of each person involved in location study	20.0
2.n	Map identifying criteria that led to the route location and new facilities	Appendix A
2.o	8½ x 11 black and white map suitable for newspaper publication	Separate Document
2.p	Discussion of present and future natural resource development in the area	18.3
2.q	Maps and GIS data meeting PSC requirements	Appendix A
69-06-06-01	Application for Waiver of Procedures and Time Schedule	Separate Document
69-06-08-02	Transmission Facility Corridor and Route Criteria	
1	Exclusion areas	16.1
1.a	Designated or registered national: parks, sites, landmarks, monuments, wilderness	16.1.1
1.b	Designated or registered state: parks, sites, monuments, archeological sites, natural preserves	16.1.2
1.c	County parks and recreational areas, municipal parks, parks owned or administered by other governmental subdivisions	16.1.3
1.d	Areas of critical habitat	16.1.4
1.e	Areas where unique or rare species would be irreversibly damaged	16.1.5
1.f	Area within 1,200 feet of ICBM facility	16.1.6
1.g	Areas within 30 feet of direct line of ICBM launch facilities	16.1.7
2	Avoidance areas	16.2
2.a	Designated or registered national: historic districts; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; grasslands	16.2.1
2.b	Designated or registered state: wild, scenic, or recreational rivers; game refuges; game management areas; forest management lands; grasslands	16.2.2
2.c	Historical resources which are not specifically designated as exclusion or avoidance areas	16.2.3
2.d	Areas which are geologically unstable	16.2.4
2.e	Within 500 feet of a residence, school, or place of business	16.2.5
2.f	Reservoirs and municipal water supplies	16.2.6

Authority	Description	Section(s)
2.g	Water sources for organized rural water districts	16.2.7
2.h	Irrigated land (does not apply to underground transmission facility)	N/A
2.i	Area of recreational significance but not designated exclusion areas	16.2.8
3	Selection criteria. Impact on:	16.3
3.a.(1)	Agricultural production	16.3
3.a.(2)	Family farms and ranches	16.3
3.a.(3)	Land economically suitable for irrigation	16.3
3.a.(4)	Surface drainage patterns and groundwater flow patterns	16.3
3.b.(1)	Sound sensitive land uses	16.3
3.b.(2)	Visual effect on adjacent area	16.3
3.b.(3)	Extractive and storage resources	16.3
3.b.(4)	Wetlands, woodlands, and wooded areas	16.3
3.b.(5)	Radio and TV reception and other communication or electronic facilities	16.3
3.b.(6)	Human health and safety	16.3
3.b.(7)	Animal health and safety	16.3
3.b.(8)	Plant life	16.3
4	Policy criteria	16.4
4.a	Location and design	16.4.1
4.b	Training and utilization of in-state labor	16.4.2
4.c	Economies of construction and operation	16.4.3
4.d	Use of citizen coordinating committees	16.4.4
4.e	Commitment of portion of transmitted product for use in state	16.4.5
4.f	Labor relations	16.4.6
4.g	Coordination of facilities	16.4.7
4.h	Monitoring of impacts	16.4.8
4.i	Using existing or proposed rights-of-way and corridors	16.4.9
4.j	Using existing or proposed transmission facilities	16.4.10

**CONSOLIDATED APPLICATION
CERTIFICATE OF CORRIDOR COMPATIBILITY AND ROUTE PERMIT
ALLIANCE SALES LINE PROJECT**

INTRODUCTION

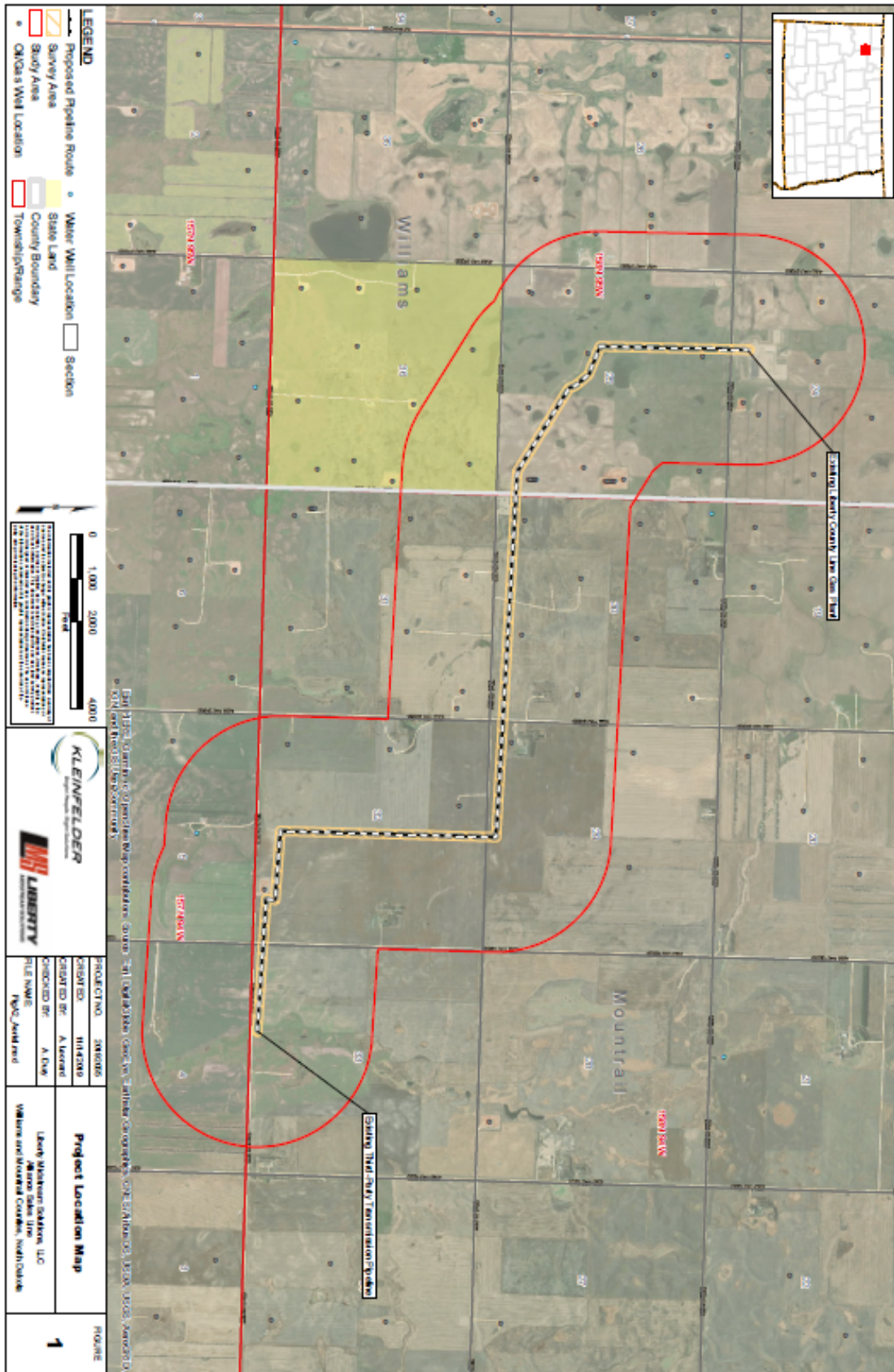
Liberty Midstream Solutions, LLC (LMS) is a Denver-based company focused on providing producer-oriented midstream services in emerging oil and gas resource plays to help producers maximize returns on investments through reliable and efficient oil, gas, and water gathering, gas processing, water delivery and produced water disposal services. Current LMS operations are located in Williams and Mountrail Counties, North Dakota.

LMS is proposing to construct and operate approximately 4.7 miles of 8-inch residue gas pipeline that will be known as the Alliance Sales Line (Project) located entirely on privately owned lands in Mountrail and Williams County, North Dakota (as shown on Figure 1). The proposed 8-inch pipeline will carry the residue gas from the existing Liberty County Line Gas Plant to an existing third-party transmission pipeline. Detailed Criteria Maps for the proposed Project are included in **Appendix A**

This application has been prepared in accordance with Chapter 49-22.1 of the North Dakota Century Code governing Energy Conversion and Transmission Facilities, and the North Dakota Administrative Code (Chapter 69-06-05), Transmission Facility Permit.

Figure 1

Date: 11/14/2019 User: ALeonard Path: \\sage\sls\p01\GIS_Projects\ClerkLiberty\Midstream\2019\2019_IDMMD\Report\FigA2_Aerial.mxd



1 FACILITY TYPE

The Project is a residue gas pipeline consisting of construction of approximately 4.7 miles of new 8-inch steel pipeline. This pipeline is located entirely on private lands in Mountrail and Williams Counties, North Dakota. The pipeline begins at the existing Liberty County Line Gas Plant located in Section 14, Township 158N, Range 95W and the alignment goes south and east to a proposed connection to an existing third-party transmission pipeline in Section 33, Township 158N, Range 94W.

2 LOCATION

2.1 PROJECT STUDY AREA

LMS defined the Study Area as a 1-mile-wide area (0.5-mile buffer on either side of the proposed centerline) and the Survey Area as a 200-foot-wide corridor (100 feet on either side of the proposed centerline). The Study Area and Survey Area are shown on Figure 1, with the U.S. Geological Survey (USGS) Tioga (1979), Mandaree NEW (1970), and White Earth (1991), North Dakota quadrangles.

2.2 PREFERRED LOCATION OF PROJECT CORRIDOR AND ROUTE

LMS is seeking approval of a Corridor that will align with the survey area used for conducting environmental field surveys. The permanent Corridor (or right-of-way [ROW]) for the proposed pipeline would be 25 feet wide, offset depending on the location of existing parallel pipeline(s) in the area; the temporary corridor for construction would be an additional 75 feet, for a total of 100 feet. Surveys were conducted in October 2018 and again in November 2019 for the Survey Area (200 feet) centered on the proposed pipeline. All areas surveyed and requested as the designated corridor will hereinafter be referred to as the Corridor. The location and width of the proposed Corridor are illustrated on the topographic and aerial maps included in Appendix A. The location of the proposed route (Route) within the proposed Corridor is also depicted on the topographic and aerial maps provided in Appendix A.

LMS's proposed Corridor and Route are the result of a thorough site analysis and coordination with LMS, landowners, local officials, agencies, and existing infrastructure owners. LMS obtained and analyzed public and proprietary information to identify sensitive areas and features within the one-mile wide Study Area, such as exclusion and avoidance areas, populated areas,

wetlands, waterbodies, natural resources, areas of cultural significance, and public lands. In addition, LMS considered existing ROWs (e.g., pipelines and roads) in an effort to maximize co-location with other infrastructure, where appropriate. LMS also sought input from affected landowners, agencies, local governments, and other infrastructure owners, and refined the Corridor and Route based on input received. LMS completed civil and environmental field surveys and additional constructability reviews to further refine its Route. Ultimately, the Corridor and Route presented in this Consolidated Application were selected to meet the Project needs, comply with the Commission's siting criteria, and minimize impacts to landowners, the environment, and existing infrastructure.

Additional discussion of the factors considered in selecting the Corridor and the Route is provided in Sections 13, 16, 17, and 18 of this Consolidated Application.

3 PURPOSE AND NEED OF THE FACILITY

LMS is proposing to construct the Project, which consists of an 8-inch residue gas pipeline to deliver processed gas from LMS's County Line Plant near Tioga, North Dakota to Alliance Pipeline's Tioga Lateral, ultimately delivering to consumers in the Chicago area.

The Project will address regional pipeline constraints as development in the Bakken continues. Williston Basin Interstate's (WBI) planned expansion to their system will not be in-service until fourth quarter 2021, but their Line 7 that currently serves that area is fully subscribed and is constrained on a regular basis. Further, with the impending change to Northern Border Pipeline's British thermal unit (BTU) limit, existing refrigeration gas plants near Tioga like LMS' County Line Plant will be unable to meet the revised specification and will need to connect to an alternate market. The Project will provide LMS customers with a much-needed alternative for marketing and transporting higher-BTU gas without requiring a costly upgrade from the refrigeration-style dew point plant to a cryogenic recovery plant.

4 PRODUCT

4.1 TYPE OF PRODUCT TO BE TRANSMITTED

The proposed Project will provide pipeline capacity to transport the increasing supplies of residue gas produced in portions of Williams, Mountrail, Burke, and Divide Counties, North Dakota.

4.2 SOURCE OF PRODUCT

The residue gas will be produced at the existing Liberty County Line Gas Plant.

4.3 FINAL DESTINATION OF PRODUCT

The Project terminus is a new delivery point that will be constructed by Alliance Pipeline in Q1 2020.

5 TECHNOLOGY TO BE DEPLOYED

The Project will be designed, constructed, maintained, inspected, and operated to meet or exceed the U.S. Department of Transportation (USDOT) Pipeline Hazardous Materials Safety Administration (PHMSA) regulations, and in accordance with industry standards and company policies. Technologies used to satisfy these requirements and standards include:

- Use of an external protective coating and cathodic protection to prevent external pipeline corrosion
- Regular foot patrols of the permanent ROW
- Leak detection and monitoring systems will be employed utilizing a pressure transmitter at the Liberty County Line Gas Plant that continually monitors pipeline pressure.

Construction and installation of the pipelines will use different techniques to avoid or minimize impacts to sensitive areas and identified road and ditch crossings, such as trenchless construction methods (e.g., borings). These techniques are discussed further in Section 10.

6 ESTIMATED TOTAL COST FOR CONSTRUCTION

The estimated total cost for construction is \$4.6 million.

7 SCHEDULE

7.1 OBTAINING CERTIFICATE OF CORRIDOR COMPATIBILITY

LMS requests a Certificate of Corridor Compatibility and Route Permit from the Commission in January of 2020.

7.2 OBTAINING ROUTE PERMIT

LMS requests a Certificate of Corridor Compatibility and Route Permit from the Commission in January of 2020.

7.3 COMPLETING RIGHT-OF-WAY ACQUISITION

LMS completed ROW acquisition for the proposed route in 2018.

7.4 STARTING CONSTRUCTION

Construction of the Project is scheduled to begin by February 2020, or upon receipt of all necessary permits and approvals.

7.5 COMPLETING CONSTRUCTION

LMS expects to complete construction of the Project by April 1, 2020.

7.6 TESTING OPERATIONS

LMS expects to conduct hydrostatic testing of the pipeline and associated facilities prior to placing the pipeline in service April 1, 2020.

7.7 COMMENCING OPERATIONS

The Project is anticipated to be operational April 1, 2020.

8 FACILITY SIZE AND DESIGN

The following provides a description of the Project design, including the pipeline infrastructure and aboveground facilities.

8.1 PIPELINE

8.1.1 Width of Right-of Way

The temporary construction ROW will be 100 feet wide (including the permanent ROW). The temporary construction ROW may be reduced in some areas as necessary to avoid impacts to environmentally sensitive areas.

The permanent ROW will be 25 feet wide. The location of the pipeline within the permanent ROW may vary, however, depending on terrain, the presence of other existing facilities, and landowner concerns. The Project will follow existing pipeline and utility easements where feasible. LMS is in the process of acquiring easements and crossing permits.

8.1.2 Length of Facility

The entirety of the new construction for the Project is 4.7 miles of new pipeline.

8.1.3 Pipe Size

The proposed pipeline would be new 8-inch steel pipeline.

8.1.4 Maximum Design Operating Pressure and Temperature

The proposed Project is designed to initially carry up to 80 million cubic feet per day (MMCFD). The Project will be designed, constructed, and operated in compliance with applicable portions of the USDOT regulations as set forth in Chapter 49 of the Code of Federal Regulations (CFR) Part 192 (49 CFR 192), Transportation of Natural and Other Gas by Pipeline. These regulations encompass general requirements, accident reporting and safety related condition reporting, design requirements, construction, pressure testing, operation and maintenance, qualification of pipeline personnel, and corrosion control. Relevant industry standards are incorporated into these regulations by reference, including those of the American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), the American Standard for Testing and Materials (ASTM), and others.

8.2 ABOVEGROUND FACILITIES

8.2.1 General Location of New Associated Facilities

Surface facilities will be limited to pipeline markers and cathodic test stations along the Route.

8.2.2 Maximum Design Flow Rate for Pipeline Facilities

The maximum design flow rate of the pipeline is 80 MMCFD.

8.2.3 Number and Location for Compressor and/or Pumping Stations

No compressor stations will be built as part of the Project. The pressure provided by input at the existing Liberty County Line Gas Plant will be adequate for operation of the pipeline at the current projected flow rates.

9 EASEMENT ACQUISITION

LMS secured the ROW by obtaining easements from landowners whose property is crossed by the Project. During easement negotiations, landowners were informed of the easement conditions and restrictions. Landowners have been compensated for the easement and will be compensated for damages resulting from construction of the Project. Landowners have been contacted to obtain permission to survey and to conduct necessary soil investigations. As the Project progresses, landowners will be advised of the survey and construction schedule, necessary site access, and any vegetation clearing and grading required for construction.

Staging and lay down areas will be located within the ROW and limited to previously disturbed or developed areas. Temporary easements/workspaces will be obtained from landowners, as needed, for the duration of construction.

10 RIGHT-OF-WAY PREPARATION, CONSTRUCTION, AND RECLAMATION PROCEDURES

10.1 DESCRIPTION OF RIGHT-OF-WAY PREPARATION AND CONSTRUCTION

LMS's facilities will be designed, constructed, tested, operated, and maintained in accordance with applicable requirements of the USDOT regulations in 49 CFR Part 192, United States Department of Labor regulations, Occupational Safety and Health Administration (OSHA)

requirements, and other applicable federal and state regulations. Among other design standards, 49 CFR Part 192 specifies pipeline material selection, minimum design requirements, protection from internal, external and atmospheric corrosion, and qualification procedures for welding and operations personnel.

Construction of the pipeline involves several procedures that are summarized in the following sections. These operations include survey and staking; clearing and grading; trenching; pipe stringing, bending, and welding; lowering the pipeline; backfilling; hydrostatic testing; and ROW cleanup and restoration.

Construction will proceed along the pipeline route in one continuous operation. As construction proceeds along a spread, construction at any single point along the pipeline, from initial surveying and clearing, to backfilling and finish grading, is anticipated to last about six to eight weeks. Multiple spreads may be constructed at the same time. The entire process will be coordinated in such a manner as to minimize the total time an individual tract of land is disturbed, exposed to erosion, or temporarily precluded from its normal use.

10.1.1 Survey and Staking

The first step of construction will involve marking the limits of the approved work area (i.e., the construction ROW and temporary workspaces), the pipeline centerline, access roads, existing utility lines, and other special areas. Sensitive areas such as wetland boundaries and cultural resource sites will be marked and flagged. LMS will notify landowners in advance of construction activities that could affect their property, business, or operations.

10.1.2 Clearing and Grading

The construction ROW will be cleared and graded (where necessary) to provide a relatively level surface for construction equipment, a sufficiently wide workspace for the passage of heavy construction equipment, and a safe work environment for the pipeline workers. Vegetation will be mowed and cleared to the edge of the work area in grassland areas where grading is not required.

To avoid soil mixing, topsoil will be removed and segregated from the underlying subsoil, stored separately from subsoil, and protected from construction-related activities. The depth of topsoil stripping will vary according to the ROW landscape position. Topsoil is typically stored at the far edge of the ROW on the opposite side of the trench from where construction machinery does its work. In some instances, topsoil may be stored off site or on the “working side” of the trench. In the latter case, the topsoil is again stored away from where machinery will operate. Construction activities will be suspended during abnormally wet conditions to prevent excessive rutting or mixing of topsoil with subsurface soils.

After pipeline installation is complete, the subsoil will be placed in the pipeline trench and adjacent areas to restore the land's natural contours. Then the topsoil will be placed back in its previous locations.

Fences and gates will be constructed during the clearing and grading operations to allow continuous use of pastures, grazing units, and livestock facilities. Silt fence will be installed along the ROW adjacent to wetlands and streams.

When crossing small water features, such as small ponds, streams, and creeks, approved temporary flumed structures will be constructed to minimize impacts to the water feature.

Temporary erosion controls will be installed after initial disturbance of soils, where necessary, to minimize erosion. Erosion controls will be maintained throughout construction.

10.1.3 Trenching

Trenches will be excavated using a wheel trencher or backhoe. Trenches will be excavated to a depth sufficient to provide a minimum of six feet of cover. The depth of cover may be increased if requested by a landowner, or as needed at road and stream crossings, and as needed for safety considerations.

10.1.4 Pipe Stringing, Bending, and Welding

After clearing and grading, the contractor will string the pipe along the ROW. Pipe will be stored at storage yards or transported directly to the pipeline ROW. The pipe lengths are typically 40 to 80 feet long. A stringing crew using special trailers will move the pipe along the ROW.

A pipe-bending machine will be used to make slight bends in the pipe to account for changes in the pipeline route and to conform to the topography. The bending machine uses a series of clamps and hydraulic pressure to make smooth, controlled bends in the pipe. All bending is performed in strict accordance with federally prescribed standards to ensure integrity of the pipe at a bend.

Pipe will be bent at the mill when necessary for sharp bends. The pipe will be pre-coated at the mill with a fusion-bonded epoxy external coating (or other coating technique) to provide corrosion protection.

A welding process will be utilized to join the sections of pipe into one continuous length. Each welder will be required to pass an approved qualification test to work on a particular pipeline aspect. The qualification tests will be conducted using project specific weld procedure(s) that will be developed in accordance with federally adopted welding standards.

Welds will be nondestructively tested to ensure structural integrity and compliance with the applicable USDOT regulations. Those welds not meeting established specifications will be repaired or removed. Once the welds are approved, the welded joints will be externally coated and the entire pipeline will be visually and electronically inspected for coating defects, scratches, or other damage. Any damage or defects will be repaired before lowering into the trench.

10.1.5 Pipeline Installation and Trench Backfilling

A series of side-boom tractors will simultaneously lift welded sections of the pipe and carefully lower the sections into the trench. Non-metallic slings protect the pipe and coating as it is raised and moved into position. In rocky areas, the contractor may place sandbags or foam blocks at the bottom of the trench prior to lowering-in to protect the pipe and coating from damage. Trench breakers or water stops will be installed, as necessary, adjacent to wetlands and stream crossings to eliminate groundwater migration along the trench.

The trench will be dewatered, as necessary, prior to lowering-in. Dewatering effluent will pass through sediment filters (hay bale structures and/or filter bags), if necessary, to ensure compliance with applicable water quality requirements.

The trench will be backfilled after the pipe has been installed. Soil will be returned to the trench in the reverse order of excavation. Where topsoil has been segregated, subsoil will be backfilled first and followed by the topsoil. The trench line (subsoil) will be compacted with a wheeled-roller or other suitable construction equipment. A crown will be left over the trench line to allow for natural subsidence. If the excavated material (e.g., rock) can damage the pipe and/or coating, the pipeline will be protected/padded with a rock shield and/or covered with select fill, obtained from commercial borrow areas or by separating suitable material from nearby trench spoils. Topsoil will not be used for padding.

10.1.6 Hydrostatic Testing

The entire length of the pipeline will be hydrostatically tested before being placed into service. Requirements for this test are prescribed in the USDOT's federal regulations. Water from municipal water sources is anticipated.

Each pipe section will be filled with water and pressured to a level higher than the operating pressure. The test pressure will be held for a specific period to confirm that it meets the design strength requirements and if any leaks are present.

Hydrostatic test water will be discharged in accordance with applicable permits. It is anticipated that hydrostatic test water will be trucked to frac tanks located at the Liberty County Line Gas Plant, then transported to a nearby saltwater disposal facility. Test water will contact only new

pipe and LMS does not anticipate the addition of chemicals to the test water. Once a test section successfully passes the hydrostatic test, the water will be emptied from the pipeline in accordance with federal and state requirements. The pipeline will then be dried to assure it has no free water in it before being put in service.

10.1.7 Cleanup

The final step in the construction process is restoring the ROW as closely as possible to its original condition. Depending on the project requirements, this typically involves loosening the soil within construction work areas, replacing the topsoil, and seeding non-cultivated land. Final grading is anticipated to occur within 20 days of backfilling the trench, or after the Spring thaw, whichever occurs last. Permanent erosion controls will be installed within the ROW during this phase.

Pipeline markers and/or warning signs will be placed along the pipeline centerline at specified intervals to identify the location of the pipe. Access roads will be restored to pre-construction conditions, unless otherwise specified by the property owner and approved by regulatory agencies. Private and public property (e.g., fences, gates, driveways, roads, etc.) that were disturbed by construction will be restored to their original or better conditions, consistent with agreements with individual landowners, counties and/or townships, and any applicable permit requirements.

10.2 SPECIAL CONSTRUCTION TECHNIQUES

10.2.1 Highway, Road, and Railroad Line Crossings

Highway, road, and railroad line crossings will be constructed according to applicable crossing permits. Primary roads are generally major roads and highways with relatively large volumes of traffic that have a well-defined traveled roadway (i.e., traffic lane) and shoulders with a granular pavement and/or concrete surface. Primary roads and railroad crossings will be constructed using the conventional bore method or by the horizontal directional drilling (HDD) method. Little or no traffic disruption is expected when using the bore or HDD method.

Secondary roads are generally roads with moderate traffic. Usually the traveled roadway will be defined but may have apparent shoulders. The road surface may contain granular material, soil, or a combination of both. Secondary roads will be crossed using the open-cut method.

Unimproved roads are generally minor roads with minimal, if any, traffic. They will normally be identified as small roadways, trailer, or tracks with no embankment or adjacent ditches and constructed/situated in natural earth material. The surface may have a light sprinkling of granular material. Unimproved roads will be crossed using the open-cut method.

10.2.2 Waterbody Crossings

“Waterbody” includes any natural or artificial stream, river, or drainage with perceptible flow at the time of crossing, and other permanent waterbodies such as ponds and lakes. There are no waterbody crossings for this pipeline.

LMS’s Stormwater Pollution Prevention Plan (SWPPP), included in **Appendix B**, specifies measures based on best management practices (BMPs) that will address erosion control, equipment refueling, timing, construction methods, and restoration to protect waterbodies in the Project area.

10.2.3 Wetland Crossings

There will be three wetland crossings for the Project. Two of the wetlands will be avoided by using the HDD construction method and one will be open cut. The impacts to the wetland will be temporary and will not result in a fill of the wetland. Therefore, the U.S. Army Corps of Engineers (USACE) Nationwide Permit (NWP) 12 will be used and a Pre-Construction Notification would not be required. The temporary impact areas would be revegetated, as applicable, and the wetland returned to the previous contours. A copy of NWP 12 will be onsite during construction.

Sediment barriers and erosion control measures will be installed and maintained adjacent to wetlands as necessary to minimize the potential for sediment runoff. Sediment barriers will also be installed where necessary to minimize the potential for sediment to run off the construction ROW and into wetland areas outside of work areas. Sediment barriers will be installed across the full width of the construction ROW at the base of slopes adjacent to wetlands. Sediment barriers installed across the working side of the ROW will be removed when construction equipment is present to allow orderly progression along the ROW. Sediment barriers will be replaced at the end of the day.

Temporary erosion control devices will be installed where necessary until vegetation of adjacent upland areas is successful. Permanent slope breakers may be installed across the ROW in upland areas adjacent to the wetland boundary. The SWPPP included in **Appendix B** has the locations of these BMPs clearly shown on the site plans.

Temporary workspace will be located within the temporary ROW on both sides of the wetland to stage construction, fabricate the pipeline, and store materials. Temporary workspaces will be located in upland areas at least 50 feet from the wetland edge.

10.2.4 Open Cut Construction

The open cut crossing method of construction involves excavating a pipeline trench, installing a section of pipe, and then backfilling the trench with material excavated from the trench. Excavation and backfilling of the trench will be performed using backhoes or other excavation equipment.

10.2.5 HDD Technology

HDD can reduce or mitigate surface disturbance, traffic interruptions, damage to roads, and environmental impacts to streams, wetlands, cultural resources or other sensitive areas. LMS will use HDD technology for some of the pipeline crossings and two of the three wetlands crossed by the pipeline. HDD technology requires specialized equipment and personnel.

10.3 RESTORATION PROCEDURES

The construction contractor will limit ground disturbance wherever possible and use appropriate erosion and sediment control measures. Disturbed areas will be restored to their original contours and condition to the extent practical, unless landowner consent is obtained to do otherwise. Post- construction reclamation activities include removing and disposing of debris, dismantling temporary facilities, leveling or filling tire ruts, loosening soil, and reseeded non-cultivated areas.

11 OPERATION AND MAINTENANCE

The following measures will be implemented to prevent or mitigate any adverse effects resulting from the Project operations:

1. LMS will follow a written manual of procedures for conducting normal operations and maintenance activities and for handling abnormal operations and emergencies. The manual will delineate the responsibilities of both management and operating personnel and will be reviewed each calendar year to confirm its effectiveness. The manual will include provisions that address the following:
 - a. Retention of important construction, operation, and maintenance records, including records of pipeline and equipment inspections.
 - b. Procedures for reporting spills, accidents, and safety related conditions.
 - c. Identification of sensitive areas along the Project route that would require an immediate response to prevent hazards to the public if the facilities failed or malfunctioned.
 - d. Procedures for receiving, identifying, and classifying notices of events that need either an immediate response by Project personnel or a notice to fire, police, or other appropriate public officials.

- e. Establishing and maintaining liaison with fire, police, and other appropriate public officials. Procedures will be included for notifying these officials of pipeline emergencies and coordinating with them on pre-planned and actual responses during such emergency.
 - f. Maintaining a list and contact information of area contractors that may be used to respond to a spill or emergency.
2. LMS will monitor pipeline inlet pressure at the existing Liberty County Line Gas Plant. There will also be a relief valve at the existing Liberty County Line Gas Plant to protect the pipeline from overpressure.
3. A continuing training program will be implemented to instruct personnel in safely carrying out the operations, maintenance, and emergency procedures related to their assignments. This will include instruction on the characteristics and hazards of the residue gas being transported, the recognition of conditions that are likely to cause emergencies, and the steps necessary to control or minimize the impacts of an accidental release. A copy of LMS' Emergency Action Plan is included in **Appendix C**.
4. A damage prevention program will be established to prevent damage to the pipeline from excavation activities or other encroachments on the ROW. The damage prevention program will include participation in the North Dakota "One-Call" system that requires prior notification when excavation by third parties is to occur near the Project.

12 ALTERNATIVES CONSIDERED

As part of Project development, LMS analyzed alternatives to the proposed Project. The alternatives analysis considered a no action/no build alternative, shipping alternatives via other pipelines, rail, or truck, and different routes.

12.1 NO-ACTION ALTERNATIVE

If this alternative were selected, LMS would segregate the high-BTU gas from the existing plant's de-ethanizer tower and use it as a fuel, as opposed to putting it into the proposed new pipeline.

LMS has determined that the no-action alternative is not an acceptable long-term alternative to the proposed Project due to the fact that the amount of gas that would need to be used as fuel would generate far more power than what's needed at the County Line Plant.

12.2 NORTH DAKOTA PIPELINE ALTERNATIVES

Residue gas export pipeline capacity near Tioga is becoming increasingly constrained as a result of increasing oil production. As additional natural gas is produced, captured, and processed, residue gas will continue to increase. A new long-haul pipeline has been proposed by WBI, but will not be online until the fourth quarter of 2021, and will likely be limited to 1,100 BTU/SCF which cannot be achieved with a traditional refrigeration plant like many of those used in the Tioga area.

The Project will bring new inter-basin pipeline capacity close to existing and expanding natural gas processing plants. The Project will bring pipeline capacity closer to these plants and provide an alternative high-BTU gas market for these producers.

There are no currently available viable pipeline alternatives to the Project. Furthermore, the Project should enhance overall economic values of the existing residue gas production within North Dakota as well as adding needed capacity in new areas of the Bakken play.

12.3 ROUTE ALTERNATIVES

The proposed route was determined based on the location of existing Liberty County Line Gas Plant and the route of the existing third-party pipeline. No other route would capture the efficiencies of following the existing easement. Any other route would result in greater overall impacts.

13 ENVIRONMENTAL STUDIES

Resource assessments, both field and desktop, were performed based on the Commission's siting requirements. The Study Area is a one-mile wide area centered on the proposed alignment, consisting of 0.5-mile buffer on either side of the pipeline centerline (i.e., the Study Area). The Study Area refers to the desktop review conducted prior to field surveys. The Survey Area consists of a 200-foot wide corridor centered on the proposed pipeline and included those areas where construction and installation of new pipe is anticipated. This Survey Area boundary was utilized for the field surveys for both natural and cultural resources. The permanent disturbance for the Project would be a 25-foot corridor, with an additional temporary disturbance corridor of 75 feet, for a total temporary construction corridor of 100 feet. The Study Area, Survey Area, and proposed temporary and permanent corridors are shown on all maps included in **Appendix A**.

LMS performed the following resource assessments for the Project:

- A Class I and Class III Cultural Resource Inventory;
- A wetland and waterbody delineation, consultation and assessment for threatened and endangered species; and
- Field surveys that determined tree, shrub, and noxious weed locations in the Project area, as applicable.

13.1 CULTURAL RESOURCE INVENTORY

On behalf of LMS, SWCA Environmental Consultants (SWCA) conducted a Class I and Class III cultural resource inventory in support of the proposed Project in Williams and Mountrail Counties. The Class I was conducted on September 27, 2018, and the Class III was conducted on October 2 through 4 and 13, 2018. An update to the Class I was conducted on October 21, 2019, and an additional Class III survey was conducted on November 19, 2019. The inventory was undertaken to assist LMS in meeting the cultural resource requirements within the Commission's Certificate of Corridor Compatibility and Route Permit application for the proposed Project. Additionally, SWCA's inventory assists LMS in achieving compliance with the USACE NWP General Conditions pertaining to Section 106 of the National Historic Preservation Act (NHPA).

During the inventory, SWCA personnel recorded two newly identified sites: 32WI2307, a historic farmstead site, and 32MN1516, a historic foundation site. 32WI2307 and 32MN1516 have been recommended as "not eligible" for inclusion in the National Register of Historic Places (NRHP); therefore, no further work is recommended for these sites. SWCA recommends the Project be granted a determination of No Historic Properties Affected and clearance to proceed as planned.

The complete Class I and Class III Cultural Resource Inventory for the Project is included in **Appendix D**. The Inventory was submitted to the North Dakota State Historical Preservation Office (SHPO).

SHPO concurrence, with respect to the effects on known resources and appropriate mitigation measures, is currently pending. A copy of the SHPO concurrence letter will be submitted to the Commission upon receipt. In addition, LMS has developed an Unanticipated Discovery Plan (UDP) to guide procedures if unknown cultural resource or human remains are encountered during construction. The UDP outlines the framework for handling such discoveries in an efficient and legally compliant manner. This plan is included in **Appendix E**.

13.2 WETLAND AND WATERBODY INVENTORY

Prior to conducting surveys, SWCA reviewed the US Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) data, topographic maps (USGS 2011), and recent aerial photography (U.S. Department of Agriculture, Farm Service Agency 2016) to determine the location and extent of mapped wetlands and waterbodies within the Study Area. The NWI records identified approximately 1.08 acres of wetlands in the Survey Area (as seen in Table 1). SWCA performed a field survey on October 2, 2018 and additional field survey for a minor route shift on October 29, 2019 to confirm the presence of the NWI-mapped wetlands in the Survey Area. The three wetlands identified within the Survey Area are palustrine emergent (PEM) wetlands characterized by the presence of herbaceous hydrophytic or submergent aquatic macrophytes. Table 1 summarizes the results of the wetland and waterbody field survey.

Table 1
PEM Wetland Acreage within the Survey Area

Feature ID	Associated Sampling Point	Sampling Point Location		Total Size (acres)	Total Size within 100-foot Construction ROW (acres)
		Latitude	Longitude		
WET01	DP2U	48.482827	-102.900126	0.31	0.21
	DP3W	48.482622	-102.900157		
WET02	DP4W	48.478949	-102.897051	0.33	0.15
	DP5U	48.479168	-102.896918		
WET03	DP7U	48.476796	-102.892475	0.45	0.30
	DP8W	48.476732	-102.89223		
Total				1.08	0.67

The three wetlands, identified as WET01, WET02, and WET03, are isolated and likely non-jurisdictional; however, the USACE has the final authority to determine jurisdictional status. WET01 and WET02 are seasonal wetlands. WET03 is a semi-permanent wetland in an agricultural field. Proposed impacts to WET01 would be temporary, not resulting in loss or fill, and therefore fall under NWP 12 criteria. Proposed impacts to WET02 and WET03 would be avoided as they would be crossed by HDD. No other non-wetland waterbodies (e.g., streams, rivers, lakes, etc.) were identified within the Survey Area during the field survey. Additionally, no Waters of the State are present in the Survey Area. The locations of the delineated wetlands are shown on Figure A4 of **Appendix A**.

The complete *Natural Resources and Wetland Delineation Report for the Liberty Midstream Residue Pipeline Project* is included in **Appendix F**.

13.3 HABITAT ASSESSMENT

13.3.1 Tree/Sapling/Shrub Inventory

The Commission requires 2:1 mitigation for all trees that are 1-inch diameter or greater at breast height and all shrubs that will be impacted during the construction of the Project. SWCA conducted field surveys of the Corridor on October 2, 2018, to confirm the presence or absence of woody vegetation. Based on their findings, approximately fourteen 2-year-old sapling individuals would need to be replanted in order to fulfill the 2:1 mitigation requirement. Tree/stem counts will be conducted prior to construction and LMS will comply with the Commission tree and shrub mitigation specifications for replacement.

13.3.2 Federally Protected Species

The Endangered Species Act ([ESA], 16 U.S.C. §§ 1531-1544) ensures that any actions authorized, funded, or carried out by federal agencies do not jeopardize the existence of any listed endangered, threatened, or candidate species. The USFWS ranks potential candidates based upon the species' biological vulnerability. Species listed as endangered or threatened are provided full protection, which includes prohibition of destruction of critical habitat. Sensitive species are identified within North Dakota although they are not afforded formal protection under the Act.

At this time, the USFWS includes eight listed species, identified as threatened or endangered, that have potential to occur in the Mountrail and Williams Counties. The listed endangered species include the gray wolf (*Canis lupus*), whooping crane (*Grus americana*), interior least tern (*Sterna antillarum*), and pallid sturgeon (*Scaphirhynchus albus*). The listed threatened species include the piping plover (*Charadrius melodus*) and its designated critical habitat, Dakota skipper (*Hesperia dacotae*) and its designated critical habitat, rufa red knot (*Calidris canutus rufa*), and northern long-eared bat (*Myotis septentrionalis*). These species are discussed below along with an analysis of the potential impacts to the species.

Interior Least Tern (Federal Status: Endangered)

The interior population of the least tern is listed as endangered by the USFWS (1985a). This bird is the smallest member of the gull and tern family, measuring approximately nine inches in length. Terns remain near flowing water, where they feed by hovering over and diving into standing or flowing water to catch small fish (USFWS 2013b).

The interior population of least terns breeds in isolated areas along the Missouri, Mississippi, Ohio, Red, and Rio Grande river systems where they nest in small colonies. From late April to August, terns nest in a shallow hole scraped in an open sandy area, gravel patch, or exposed

flat; and in bare sandbars along rivers, sand and gravel pits, or lake and reservoir shorelines. The adults continue to care for chicks after they hatch. Least terns in North Dakota often will be found sharing sandbars with the piping plover, a threatened species (USFWS 2013b).

Census data indicate over 8,000 least terns in the interior population. In North Dakota, the least tern is found mainly on the Missouri River from Garrison Dam south to Lake Oahe, and on the Missouri and Yellowstone Rivers upstream of Lake Sakakawea (USFWS 1990, 2013b). Approximately 100 pairs breed in North Dakota (USFWS 2013b). Details of their migration are not known, but their winter range is reported to include the Gulf of Mexico and Caribbean Islands (USFWS 1990, 2013b).

Loss of suitable breeding and nesting habitat for terns has resulted from dam construction and river channelization on major rivers throughout the Mississippi, Missouri, and Rio Grande river systems. River and reservoir changes have led to reduced sandbar formation and other shoreline habitats for breeding, resulting in population declines. In addition, other human shoreline disturbances affect the species (USFWS 1990). Critical habitat has not been designated for the species (USFWS 2013b). Current conservation strategies include identification and avoidance of known nesting areas, public education, and limiting or preventing shoreline disturbances near nests and hatched chicks (USFWS 2013b).

Given the distance to suitable habitat, the likelihood of observing a tern in the project area is relatively low. The interior least tern is not expected to be impacted by the proposed project.

Whooping Crane (Federal Status: Endangered)

The whooping crane was listed as endangered in 1970 in the United States by the USFWS and in 1978 in Canada. Historically, population declines were caused by shooting and destruction of nesting habitat in the prairies from agricultural development. Current threats to the species include habitat destruction, especially suitable wetland habitats that support breeding and nesting, as well as feeding and roosting during their fall and spring migration (Canadian Wildlife Service and USFWS 2007).

During the winter of 2015/2016, the total wild population of the Wood Buffalo-Aransas population was estimated at 329 birds (USFWS 2016a). There is only one self-sustaining wild population, the Aransas-Wood Buffalo National Park population, which nests in Wood Buffalo National Park and adjacent areas in Canada, where approximately 83 percent of the wild nesting sites occur (Canadian Wildlife Service and USFWS 2007; USFWS 2013a). Mountrail and Williams Counties, including the Project area, are within the primary migratory flyway of whooping cranes.

Whooping cranes probe the soil subsurface with their bills for food on the soil or vegetation substrate (Canadian Wildlife Service and USFWS 2007). Whooping cranes are omnivores, and foods typically include agricultural grains, as well as insects, frogs, rodents, small birds, minnows, berries, and plant tubers. The largest amount of time during migration is spent feeding in harvested grain fields (Canadian Wildlife Service and USFWS 2007). Studies indicate that whooping cranes use a variety of habitats during migration, in addition to cultivated croplands, and generally roost in small palustrine (marshy) wetlands within 0.62 mile of suitable feeding areas (Howe 1987, 1989). Whooping cranes have been recorded in riverine habitats during their migration, with eight sightings along the Missouri River in North Dakota (Canadian Wildlife Service and USFWS 2007:18). In these cases, they roost on submerged sandbars in wide, unobstructed channels that are isolated from human disturbance (Armbruster 1990).

It is well-documented that migrating whooping cranes use habitats in the vicinity of the Project for roosting and feeding. The Project area is located within the migratory corridor for the whooping crane, with the nearest sighting being approximately 4.7 miles west of the pipeline corridor (USFWS, M. Tacha, unpublished data). Suitable whooping crane foraging habitat (i.e., cultivated cropland) was observed within the Survey Area; however, high levels of disturbance near the Project area from existing roads, agriculture production, oil and gas activity, etc., minimize the likelihood for cranes to use the area within or near the pipeline corridor. The whooping crane is not expected to be impacted by the proposed Project.

Pallid Sturgeon (Federal Status: Endangered)

The pallid sturgeon has no potential habitat within the proposed Project area and was therefore not analyzed for potential impacts.

Gray Wolf (Federal Status: Endangered)

The gray wolf, listed as endangered in the United States in 1978, was believed extirpated from North Dakota in the 1920s and 1930s, with only sporadic reports from the 1930s to the present (Licht and Huffman 1996; USFWS 1978). The presence of wolves in most of North Dakota consists of occasional dispersing animals from Minnesota and Manitoba (Licht and Fritts 1994; Licht and Huffman 1996). Most documented gray wolf sightings within western North Dakota are believed to be young males seeking to establish territory (Hagen et al. 2005). The Turtle Mountain region of north-central North Dakota provides marginal habitat that may be able to support a very small population of wolves. The closest known pack of wolves is the Minnesota population located approximately 17 miles from the northeast corner of North Dakota. The gray wolf uses a variety of habitats that support a large prey base, including montane and low-elevation forests, grasslands, and desert scrub (USFWS 2018c).

Due to a lack of forested habitat and the distance from Minnesota and Manitoba populations, as well as the troubled relationship between humans and wolves and their vulnerability to being shot in open habitats (Licht and Huffman 1996), the reestablishment of gray wolf populations in North Dakota is unlikely. Additionally, habitat fragmentation may further act as a barrier against wolf recolonization in western North Dakota. Therefore, the gray wolf is not expected to be impacted by the proposed Project.

Piping Plover (Federal Status: Threatened)

The piping plover is a small shorebird that breeds only in three geographic regions of North America: the Atlantic Coast, the Northern Great Plains, and the Great Lakes. Piping plover populations were federally listed as threatened and endangered in 1985, with the Northern Great Plains and Atlantic Coast populations listed as threatened and the Great Lakes population listed as endangered (USFWS 1985b).

Plovers in the Great Plains make their nests on open, sparsely vegetated sand or gravel beaches adjacent to alkali wetlands and on beaches, sand bars, and dredged material islands of major river systems (USFWS 2002, 2018d). The shorelines of lakes of the Missouri River constitute significant nesting areas for the bird. Piping plover nest on the ground, making shallow scrapes in the sand, which they line with small pebbles or rocks (USFWS 1988). Anthropogenic alterations of the landscape along rivers and lakes where piping plover nest have increased the number and type of predators, subsequently decreasing nest success and chick survival (USFWS 2002, 2018d). The birds fly south by mid- to late-August to areas along the Texas coast and Mexico (USFWS 2002). The Northern Great Plains population has continued to decline despite federal listing, with population estimates of 1,500 breeding pairs in 1985 reduced to fewer than 1,100 in 1990. Low survival of adult birds has been identified as a factor (Root et al. 1992). Current conservation strategies include identification and preservation of known nesting sites, public education, and limiting or preventing shoreline disturbances near nests and hatched chicks (USFWS 1988, 2018d).

The lack of alkali wetlands, minimal disturbance to foraging wetlands, and distance to critical habitat deem the likelihood of a piping plover occurring as relatively low. The piping plover is not expected to be impacted by the proposed Project.

Desktop analysis concluded that designated critical habitat for the threatened piping plover is not present in the pipeline ROW. The nearest designated critical habitat for piping plovers is approximately 10.18 miles south of the proposed pipeline. The proposed pipeline would not modify, alter, disturb, or affect the shoreline within ND Unit 11 or the alkaline lakes and wetlands within ND Units 1 through 10. Therefore, designated critical habitat of the piping plover is not expected to be impacted by the proposed Project.

Northern Long-Eared Bat (Federal Status: Threatened)

On May 4, 2015, the USFWS listed the northern-long eared bat as threatened under the ESA (USFWS 2015b). The USFWS also issued an interim rule pursuant to Section 4(d) of the ESA in conjunction with the final rule (50 CFR Part 17). For areas within the species' range that are not affected by white-nose syndrome (i.e., areas outside the 150-mile white-nose syndrome buffer zone), including all of North Dakota, the interim 4(d) rule exempts incidental take from certain activities.

This medium-sized bat ranges across the eastern and north-central United States and all of the Canadian provinces (USFWS 2015b). Throughout most of this species' range, populations are patchily distributed. They emerge at dusk to fly through the understory of forested hillsides and ridges, feeding on moths, flies, leafhoppers, caddisflies, and beetles.

Most records of northern long-eared bats are from winter hibernacula surveys, with more than 780 hibernacula identified within the United States. No known hibernacula are located in North Dakota, due to either no suitable hibernacula present or a lack of survey effort (USFWS 2013d). This bat species occupies a wide range of rocky and forested habitats. Suitable winter habitat includes large caves and mines (USFWS 2015b). Summer day roosts include abandoned buildings, bridges, hollow trees, stumps, under loose bark, and rock fissures (Jones and Choate 1978). The summer roosting period is from May through October. Removal of any potential roost trees may impact the northern long-eared bat.

Suitable winter habitat for northern long-eared bats does not occur in the pipeline ROW. Nearby trees, including quaking aspen trees recorded at sample point WV01 (Appendix A of the Natural Resources Report), and rocky outcrops can act as suitable summer day roosts. Suitable habitat in the Project area is minimal, and the 4(d) rule exempts incidental take for the proposed Project; therefore, the northern long-eared bat is not expected to be impacted by the proposed Project.

Dakota Skipper (Federal Status: Threatened)

The Dakota skipper is a small butterfly with a 1-inch wingspan. The male wing ranges from a tawny-orange to brown, and the female wing is darker brown with tawny-orange spots and faint white spots (USFWS 2014). On October 24, 2014, the USFWS determined a threatened species status for the Dakota skipper, and the final rule became effective November 24, 2014 (USFWS 2014). One unit of designated critical habitat, Unit 12, is located on the Little Missouri National Grassland.

The primary cause for the decline of this species includes the loss of high-quality native prairie habitat due to overgrazing, conversion to agriculture, and disruption of natural prairie fire cycles (USFWS 2014). 'Type A' habitat is low wet-mesic prairie with little topographic relief occurring in near-shore glacial lake deposits (Royer and Marrone 1992). Three plant species dominate 'Type A' habitat: wood lily (*Lilium philadelphicum*), bluebell bellflower (*Campanula rotundifolia*), and mountain deathcamas (*Zigadenus elegans*) (McCabe 1981). 'Type B' habitat of the Dakota skipper occurs on rolling terrain over gravelly glacial moraine deposits and is dominated by big bluestem (*Andropogon gerardii*), little bluestem (*Schizachyrium scoparium*), and needlegrasses (*Stipa spp.*), and may include bluebell bellflower and wood lily (USFWS 2016c). Additionally, 'Type B' habitat supports extensive stands of blacksamson echinacea (*Echinacea angustifolia*), upright prairie coneflower (*Ratibida columnifera*), and blanketflower (*Gaillardia aristata*) (USFWS 2016c).

During the surveys, nonnative grasslands and cropland were dominant in the Project area. Dominant species recorded during surveys included Kentucky bluegrass (*Poa pratensis*), smooth brome (*Bromus inermis*), intermediate wheatgrass (*Thinopyrum intermedium*), and western wheatgrass (*Pascopyrum smithii*).

Dakota skippers are not known to occur in the Project area. Adult Dakota skipper dispersal is limited due to a short adult life span of three weeks (Dana 1991) and one annual flight per year (USFWS 2016c). The Dakota skipper may disperse an average of 0.62 mile to an area that contains sufficient vegetative diversity and emigrants (Cochrane and Delphey 2002). Unless a site is within about 0.62 mile of an area that generates a sufficient number of emigrants, the species' extirpation from the site is likely permanent.

Larval Dakota skipper habitat within dry-mesic habitat is associated with more gravelly glacial landscapes of relatively higher relief, more variable soil moisture, and somewhat higher soil temperatures (Royer et al. 2008). Soils in these habitats are classified predominantly as sandy loams and occasionally as loamy sands (Royer et al. 2008). Soil compaction and vegetation removal substantially alter soil water movement and evaporation, thereby altering near-surface humidity (Royer et al. 2008). Livestock grazing has been shown to increase bulk density and soil compaction, which are correlated with decreased soil water content and hydraulic conductivity (Royer et al. 2008). Dakota skippers will tolerate little to no grazing in mixed-grass prairie (Cochrane and Delphey 2002; McCabe 1981). Grazing pressure within the pastureland found in the Project area is categorized as moderate to severe based on visual observance by SWCA in the field.

The nearest designated USFWS critical habitat unit, Unit 11 in Mountrail County, is located 25.63 miles south of the Project area. Additionally, Unit 12 in Williams County is located 25.98 miles south of the project area. Because of the lack of suitable habitat and the distance to the nearest known population, the Dakota skipper is not expected to be impacted by the proposed Project.

Rufa Red Knot (Federal Status: Threatened)

The rufa red knot is a medium-sized shorebird approximately 9 to 11 inches in height with breeding plumage consisting of red around the face and a prominent stripe above the eye, breast, and upper belly, and non-breeding plumage a dusky gray and white (USFWS 2013c). The USFWS published a proposal to list the rufa red knot as threatened under the ESA in the Federal Register in September 2013 (78 Federal Register 60023). On December 11, 2014, the USFWS determined a threatened species status for the rufa red knot, and the final rule became effective January 12, 2015 (79 Federal Register 73705).

The primary reason for the decline of this species includes reduced food supplies in Delaware Bay due to commercial harvest of horseshoe crabs, but also includes areas of range loss due to rising sea levels, shorelines project, and development (USFWS 2013c). The rufa red knot breeds in the Canadian Arctic and migrates 19,000 miles to winter on the U.S. Gulf Coast and in South America. The species generally occurs along the ocean coasts during migration, but a small number have been reported across the interior United States.

Suitable habitat along Lake Sakakawea is approximately 20.17 miles northwest of the Project area. The likelihood of the rufa red knot occurring in the proposed pipeline ROW is very low due to the distance to Lake Sakakawea. The rufa red knot is not expected to be impacted by the proposed Project.

13.3.3 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918, 16 U.S.C. §§ 703-712, protects bird species, including, but not limited to, cranes, ducks, geese, shorebirds, hawks, and songbirds and their nests. Suitable habitat for migratory birds exists in the entire pipeline ROW.

To protect species under the MBTA, a presence/absence survey for active nests will be conducted prior to construction. To minimize impacts, migratory birds and nests will be avoided during construction and operation of the pipeline. Any wildlife encountered during work activities will be avoided to the extent possible. Consultation with the USFWS regarding nesting avian species will be continued during construction activities as necessary. To avoid or minimize potential impacts of the proposed Project on migratory birds, LMS will use standard construction practices associated with migratory birds. As such, migratory birds are not expected to be impacted by the proposed Project. Refer to **Appendix F**, Natural Resources Report, for additional information on migratory birds.

13.3.4 Bald and Golden Eagle Protection Act Consultation

The bald eagle (*Haliaeetus leucocephalus*) feeds on fish and carrion and typically roosts in large trees near a water source. Bald eagle nesting habitat is typically any mature stands of conifer (*Pinophyta sp.*) or cottonwood (*Populus sp.*) trees in association with rivers, streams, reservoirs, lakes, or any significant body of water. Bald eagles in North Dakota are usually observed along the Missouri River (North Dakota Game and Fish Department 2016) and Yellowstone River. Bald eagles frequently migrate through the grassland habitats. The nearest known bald eagle nest is approximately 27.35 miles from the pipeline ROW (North Dakota Game and Fish Department 2015). The USFWS generally recommends a buffer of 0.5 mile from any eagle nest. If any active nests are discovered within 0.5 mile of the pipeline ROW, construction should halt and the USFWS should be contacted for further direction. If these recommendations are followed, bald eagles are not expected to be impacted by the proposed Project.

The golden eagle (*Aquila chrysaetos*) prefers habitat characterized by open prairie, plains, and forested areas. Usually, golden eagles can be found in proximity to badland cliffs, which provide suitable nesting habitat. The USFWS generally recommends a buffer of 0.5 mile from any eagle nest. If any active nests are discovered within 0.5 mile of the pipeline ROW, construction should halt and the USFWS should be contacted for further direction. If these recommendations are followed, golden eagles are not expected to be impacted by the proposed Project.

A 0.5-mile line-of-sight binocular survey for raptor nests was conducted by SWCA in October 2018. Due to the lack of occupied bald and golden eagle nests in the Survey Area and lack of suitable habitat within the Corridor, bald and golden eagles are not expected to be impacted by the proposed Project.

The complete *Natural Resources and Wetland Delineation Report for the Liberty Midstream Residue Pipeline Project* is included in **Appendix F**.

13.4 NOXIOUS WEEDS

In 2017, no state-listed noxious weeds were found in Mountrail and Williams Counties (North Dakota Department of Agriculture 2017a). However, in the same year, Mountrail County found two species of county-listed noxious weeds on 3,600 and 1,600 acres respectively, totaling 5,200 acres of known noxious weeds. Table 2 breaks down the state- and county-listed noxious weeds by acres covered in the county per species.

Table 2.
Noxious Weeds in Williams and Mountrail Counties, North Dakota (2017)

Common Name	Scientific Name	Williams County (acres)	Mountrail County (acres)
State-Listed Noxious Weeds			
Absinthium	<i>Artemisia absinthium</i>	0.0	0.0
Canada thistle	<i>Cirsium arvense</i>	0.0	0.0
Dalmatian toadflax	<i>Linaria dalmatica</i>	0.0	0.0
Diffuse knapweed	<i>Centaurea diffusa</i>	0.0	0.0
Leafy spurge	<i>Euphorbia esula</i>	0.0	0.0
Nodding plumeless thistle	<i>Carduus nutans</i>	0.0	0.0
Purple loosestrife	<i>Lythrum salicaria</i>	0.0	0.0
Russian knapweed	<i>Acroptilon repens</i>	0.0	0.0
Saltcedar	<i>Tamarix ramosissima</i>	0.0	0.0
Spotted knapweed	<i>Centaurea stoebe</i>	0.0	0.0
Yellow toadflax	<i>Linaria vulgaris</i>	0.0	0.0
County-Listed Noxious Weeds			
Common tansy	<i>Tanacetum vulgare</i>	--	1,600.0
Gypsyflower	<i>Cynoglossum officinale</i>	0.0	3,600.0
Narrowleaf hawksbeard	<i>Crepis tectorum</i>	0.0	--
Palmer amaranth	<i>Amaranthus palmeri</i>	0.0	--
Total		0.0	5,200.0

Sources: North Dakota Department of Agriculture (2017 and 2017b)

SWCA did not identify any occurrences of state-listed or county-listed noxious weeds within the Survey Area during the field surveys in October 2018. Surveys were conducted outside of the optimal growing season; however, residual plant matter would have likely been observed if large stands of noxious weed(s) were present. LMS will monitor and control noxious weeds within the Corridor prior to and subsequent to construction.

14 CONSULTATION

Consultation letters were mailed in October 2019 to various agencies and officials, including those identified in N.D.A.C. Section 69-06-01-05, providing information regarding the Project and requesting input. Letters were sent to the following agencies:

- Federal Aviation Administration
- Job Service of North Dakota
- Mountrail County Commission

- North Dakota Aeronautics Commission
- North Dakota Attorney General
- North Dakota Department of Agriculture
- North Dakota Department of Career and Technical Education
- North Dakota Department of Environmental Quality
- North Dakota Department of Health
- North Dakota Department of Human Services
- North Dakota Department of Transportation
- North Dakota Energy Development Impact Office
- North Dakota Game and Fish Department
- North Dakota Indian Affairs Commission
- North Dakota Industrial Commission
- North Dakota Labor Department
- North Dakota Parks and Recreation Department
- North Dakota Pipeline Authority
- North Dakota Soil Conservation Committee
- North Dakota State Water Commission
- North Dakota Transmission Authority
- North Dakota Trust Lands
- Office of Governor
- U.S. Army Corps of Engineers
- U.S. Department of Defense
- U.S. Fish and Wildlife
- Williams County Commission

Please refer to **Appendix G**, Agency Correspondence/Consultation, for a tracking table and copies of the consultation letters that have been sent out and received.

15 IDENTIFICATION OF POTENTIAL PERMITS/APPROVALS

LMS will comply with all agency rules and regulations having jurisdiction over the proposed Project and will obtain all other necessary licenses and permits prior to construction. Potential federal, state, and local permits and approvals required are shown in Table 3.

**Table 3
Potential Permits/Approvals**

Agency	Type of Approval	Status	Need
Federal Permits			
U.S. Army Corps of Engineers – Omaha District, Bismarck Office	Section 404 Clean Water Act – Nationwide Permit 12 (NWP 12)	N/A	Based on field survey results, a Pre-Construction Notification (PCN) will not be required for this Project.
U.S. Fish and Wildlife Service – Region 6 Mountain- Prairie Region	Section 7 Consultation	Allow 60 days for informal USFWS consultation	If necessary
State of North Dakota Permits			
North Dakota Public Service Commission (PSC)	Certificate of Corridor Compatibility and Route Permit	Pending	Required to construct a transmission facility.
North Dakota Department of Environmental Quality – Division of Water Quality	NDPDES Permit to Discharge Hydrostatic Test Water (NDG07- 0000)	N/A	Required for dewatering of pipeline following hydrostatic testing.
North Dakota Department of Health	Section 401 Clean Water Act Certification	N/A	Required for projects that require a USACE approval and may result in any discharge into the navigable waters of the United States.
North Dakota Department of Environmental Quality – Division of Water Quality	NDPDES Construction Stormwater General Permit (NDR10-0000)	Pending	Required for all construction projects that disturb one or more acres, including smaller projects within or part of a larger development. Includes the development of a Stormwater Pollution Prevention Plan (SWPPP).
State Historical Society of North Dakota (SHPO)	Cultural Resource Review	Pending	Compliance with N.D.C.C. Ch. 55-03 to assess the potential Project impacts to cultural resources.
County Permits			
Williams County Road Department	Williams County Road Crossing Permit and Road Approach Permit	Pending	Individual crossing permit will be required for each county road crossed by the pipeline. Temporary or Permanent Road Approach Permits will be required when the pipeline route must be accessed from a county roadway.

Agency	Type of Approval	Status	Need
Mountrail County Road Department	Mountrail County Road Crossing Permit and Road Approach Permit	Pending	Individual crossing permit will be required for each county road crossed by the pipeline. Temporary or Permanent Road Approach Permits will be required when the pipeline route must be accessed from a county roadway.

16 SITING CRITERIA

The exclusion and avoidance area criteria set forth in North Dakota Administrative Code (NDAC) § 69-06-08-02(1) and (2) were taken into consideration when establishing the location of the proposed route. Any exclusion and avoidance areas located within the Corridor are depicted on the figures in **Appendix A**. Further discussion of these areas, the selection criteria, the policy criteria and other criteria considered is provided in the following Sections. The criteria set forth in North Dakota Century Code (NDCC) § 49-22.1-09 were also evaluated, as discussed in the following Sections.

16.1 EXCLUSION AREAS

In accordance with NDAC § 69-06-08-02(1), certain geographical areas shall be excluded from consideration for a transmission facility route. A buffer zone of a reasonable width to protect the integrity of the area must be included. Exclusion areas may be located within a corridor, but at no given point may such an area or areas encompass more than 50% of the corridor unless there is no reasonable alternative. A summary of exclusion areas in relation to the Corridor and Route is provided in Table 4.

Table 4
Exclusion Areas Summary

Geographic Area	Present within 1-mile- wide Study Area	Present within 200-foot-wide Survey Area Corridor	Crossed by Route
Designated or registered national: parks; memorial parks; historic sites and landmarks; natural landmarks; monuments; and wilderness areas.	No	No	No
Designated or registered state: parks; historic sites; monuments; historical markers; archaeological sites; and nature preserves.	No	No	No

Geographic Area	Present within 1-mile- wide Study Area	Present within 200-foot-wide Survey Area Corridor	Crossed by Route
County parks and recreational areas; municipal parks; and parks owned or administered by other governmental subdivisions.	No	No	No
Areas critical to the life stages of threatened or endangered animal or plant species.	No	No	No
Areas where animal or plant species that are unique or rare to this state would be irreversibly damaged.	No	No	No
Areas within 1,200 feet of the geographic center of an intercontinental ballistic missile (ICBM) launch or launch control facility.	No	No	No
Areas within 30 feet on either side of a direct line between ICBM launch or launch control facility.	No	No	No

16.1.1 Designated or Registered National Parks, Memorial Parks, Historic Sites and Landmarks, Natural Landmarks, Monuments, and Wilderness Areas

The Corridor and Route do not cross designated or registered national parks, memorial parks, historic sites and landmarks, natural landmarks, monuments, and wilderness areas.

16.1.2 Designated or Registered State Parks, Historic Sites, Monuments, Historical Markers, Archaeological Sites, and Nature Preserves

The Corridor and Route do not cross designated or registered state parks, historic sites, monuments, historical markers, archaeological sites, and nature preserves.

16.1.3 County Parks and Recreational Areas, Municipal Parks, and Parks Owned or Administered by Other Governmental Subdivisions

The Corridor and Route do not cross any county parks and recreational areas, municipal parks, or parks owned or administered by other governmental subdivisions.

16.1.4 Areas Critical to the Life Stages of Threatened or Endangered Animal or Plant Species

The Corridor and Route do not cross any areas critical to the life stages of threatened or endangered animal or plant species.

16.1.5 Areas Where Animal or Plant Species that are Unique or Rare to This State Would be Irreversibly Damaged

The Corridor and Route do not cross any areas where animal or plant species that are unique or rare to this state would be irreversibly damaged by the Project.

16.1.6 Areas within 1,200 Feet of the Geographic Center of an ICBM Launch or Launch Control Facility

The Corridor and Route are not located within 1,200 feet of the geographic center of an ICBM Launch or Launch Control Facility.

16.1.7 Areas within 30 Feet on Either Side of a Direct Line between ICBM Launch or Launch Control Facility

The Project Corridor and Route do not cross areas within 30 feet on either side of a direct line between an ICBM Launch or Launch Control Facility.

16.2 AVOIDANCE AREAS

In accordance with NDAC § 69-06-08-02(2), certain geographical areas may not be considered in the routing of a transmission facility unless the applicant shows that, under the circumstances, there is no reasonable alternative. In determining whether an avoidance area should be designated for a facility, the Commission may consider, among other things, the proposed management of adverse impacts; the orderly siting of facilities; system reliability and integrity; the efficient use of resources; and alternative routes. In addition, a buffer zone of a reasonable width to protect the integrity of the area must be included, unless a distance is specified in the criteria. Avoidance areas may be located within a corridor, but at no given point may such an area or areas encompass more than 50% of the corridor unless there is no reasonable alternative. A summary of avoidance areas is provided in Table 5.

**Table 5
Avoidance Areas Summary**

Avoidance Area	Present within 1- mile-wide Study Area	Present within 200-foot-wide Survey Area Corridor	Crossed by Route	>50% of Study Area Corridor Width
Designated or registered national: historic districts; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; and grasslands.	No	No	No	No

Avoidance Area	Present within 1- mile-wide Study Area	Present within 200-foot-wide Survey Area Corridor	Crossed by Route	>50% of Study Area Corridor Width
Designated or registered state: wild, scenic, or recreational rivers; game refuges; game management areas; management areas; forests; forest management lands; and grasslands.	No	No	No	No
Historical resources which are not specifically designated as exclusion or avoidance areas.	No	No	No	No
Areas that are geologically unstable.	No	No	No	No
Within five hundred feet of a residence, school, or place of business.	No	No	No	No
Reservoirs and municipal water supplies	No	No	No	No
Water sources for organized rural water districts.	No	No	No	No
Irrigated land. This criterion shall not apply to an underground transmission facility.	N/A	N/A	N/A	N/A
Areas of recreational significance which are not designated as exclusion areas	No	No	No	No

16.2.1 Designated or Registered National Avoidance Areas

No designated or registered national historic districts, wildlife areas, wild, scenic, or recreational rivers, wildlife refuges, or grasslands are located within the Study Area, Survey Area, or Route.

16.2.2 Designated or Registered State Avoidance Areas

The Corridor and Route do not cross any designated or registered state, wild, scenic, or recreational rivers, game refuges, game management areas, management areas, forests, forest management lands, or grasslands.

16.2.3 Historical Resources Not Specifically Designated as Exclusion or Avoidance Areas

No historical resources not specifically designated as exclusion or avoidance areas are within the proposed Corridor or crossed by the Route.

16.2.4 Areas that are Geologically Unstable

The Corridor and Route do not cross geologically unstable areas.

16.2.5 Areas Within 500 Feet of a Residence, School, or Place of Business

The Corridor and Route are not located within 500 feet of an inhabited rural residence, school, or place of business.

16.2.6 Reservoirs and Municipal Water Supplies

There are no reservoirs or municipal water supplies crossed by the Corridor and Route.

16.2.7 Water Sources for Organized Rural Water Districts

The Corridor and Route do not cross any water sources for organized rural water districts.

16.2.8 Areas of Recreational Significance that are not Designated as Exclusion Areas

No areas of recreational significance which are not designated as exclusion areas are crossed by the Project Corridor or Route.

16.3 SELECTION CRITERIA

Pursuant to NDAC § 69-06-08-02(3), a corridor or route shall be approved only when it has been demonstrated that any significant adverse effects resulting from the location, construction, and maintenance of the facility as they relate to the criteria shown in Table 6, will be at an acceptable minimum, or that those effects will be managed and maintained at an acceptable minimum. The proposed Project satisfies the Selection Criteria requirements.

**Table 6
Selection Criteria**

Selection Criteria	Anticipated Impact
Land which the owner can demonstrate has soil, topography, drainage, and an available water supply that cause the land to be economically suitable for irrigation.	No permanent impacts are anticipated.
Surface drainage patterns and ground water flow patterns.	No permanent impacts are anticipated.
Noise-sensitive land uses.	Noise-sensitive areas include residences near the Project. Increased noise may be experienced at these locations during construction of the project, but no long-term noise impacts are anticipated.
The visual effect on the adjacent area.	No permanent impacts are anticipated.
Extractive and storage resources.	No permanent impacts are anticipated.
Wetlands, woodlands, and wooded areas.	Temporary impacts may occur. Mitigation measures are discussed in Section 10.2.

Radio and television reception, and other communication or electronic control facilities.	No permanent impacts are anticipated.
Human health and safety.	No permanent impacts are anticipated. Mitigation measures will be implemented as discussed throughout this application.
Animal health and safety.	No threatened or endangered species were observed in the Survey Area. Wildlife species currently inhabiting the Corridor are common and likely will not be permanently displaced by the proposed Project. Temporary disturbance will occur during construction of the proposed Project; however, no direct, long-term impacts to wildlife are anticipated from the Project.
Plant life.	Plants species currently inhabiting the Corridor are common. No permanent impacts are anticipated.

16.4 POLICY CRITERIA

16.4.1 Location and Design

LMS selected the Corridor and Route based on a number of factors, including environmental, engineering, and constructability considerations.

LMS worked with landowners and consulted with local, state, and federal agencies to identify siting constraints and inform the siting of the proposed Corridor and Route. Field surveys, including those assessing natural and cultural resources, provided supplemental information to assist in refining the route to avoid or minimize impacts to sensitive resources.

16.4.2 Training and Use of In-State Labor

LMS expects to employ approximately 20 workers during peak Project construction. Local, in-state labor will be used to the extent practicable. However, if specialized skilled workers (e.g., licensed welders) are not available within the state, LMS may need to employ workers from out-of-state.

16.4.3 Economies of Construction and Operation

LMS will explore all economic efficiencies for construction and operations. Efficiencies may include starting pipeline construction with completion of similar pipeline projects in order to minimize mobilization/demobilization costs, timing pipe acquisition and delivery with other projects in the area, and constructing the pipeline using multiple spreads in order to minimize overall construction time.

16.4.4 Use of Citizen Coordinating Committees

Other than one-on-one communication with landowners, no formal Citizen Coordinating Committees were used for communications and outreach to the public or jurisdictional entities.

16.4.5 Commitment of a Portion of Transmitted Product for Use in State

The entirety of the residue gas will be delivered to third-party natural gas transmission facilities for transport to out-of-state markets.

16.4.6 Labor Relations

LMS maintains a positive relationship with its employees, contractors, and the public, and is committed to a safe working environment. LMS is an Equal Opportunity Employer and expects to use local personnel for construction of the proposed Project when possible.

16.4.7 Coordination of Facilities

LMS performed a centerline survey of the Route and, based on that survey, LMS identified all third-party entities/utilities that will be encountered (e.g., petroleum, water, electric, highways). LMS will also utilize a portion of the pipeline and share resources during operation and maintenance.

16.4.8 Monitoring Impacts

LMS is committed to ensuring that BMPs are utilized during construction to minimize environmental impacts and will monitor construction compliance with the commitments made in this application and applicable permit conditions. The proposed Project will be constructed and maintained in accordance with industry and government requirements and will meet or exceed all applicable federal, state, and local environmental laws, regulations, and standards, including those regulations stipulated by PHMSA.

In addition, LMS will provide construction oversight to confirm contractor compliance with mitigation measures, landowner agreements, and applicable permits. LMS will have third-party inspectors who are knowledgeable of the environmental mitigation requirements for the Project. The inspectors will have the authority to stop construction activities and order corrective mitigation and will maintain appropriate compliance documents.

16.4.9 Using Existing and Proposed ROW and Corridors

LMS's proposed Route was sited to co-locate with existing utility corridors, roads, and other existing linear features to the extent practical.

16.4.10 Other Existing or Proposed Transmission Facilities

The Project will provide an outlet for residue gas from the existing Liberty County Line Gas Plant and will tie into an existing third-party pipeline for distribution.

17 EVALUATION OF N.D.C.C. SECTION 49-22.1-09

In selecting the proposed Corridor and Route for the Project, LMS evaluated the factors set forth in N.D.C.C. Section 49-22.1-09. A discussion of each factor is provided below.

17.1 EFFECTS ON PUBLIC HEALTH, WELFARE, NATURAL RESOURCES, AND THE ENVIRONMENT

Please see Sections 13, 14, 16, and 19 of this Consolidated Application for a discussion of available research and investigations relating to the effects of the location, construction, and operation of the proposed Project on public health and welfare, natural resources, and the environment. As discussed further in those sections, the Project is not anticipated to have any significant or long-term negative impacts on public health and welfare, natural resources, or the environment.

17.2 TRANSMISSION TECHNOLOGIES AND SYSTEMS DESIGNED TO MINIMIZE ADVERSE ENVIRONMENTAL EFFECTS

The Project design is consistent with existing pipeline technologies. Mitigation measures have been or will be used to avoid or minimize any potential impacts to sensitive resources, including use of trenchless construction (bores) at road and wetland crossings or due to constructability concerns. In addition, throughout construction, BMPs will be implemented to reduce any potential impacts to resources from ROW clearing, grading, trenching, and pipe and facility installation. Once constructed, leak detection and monitoring systems will be employed.

17.3 POTENTIAL FOR BENEFICIAL USES OF WASTE ENERGY FROM A PROPOSED ENERGY CONVERSION FACILITY

The proposed Project does not include any energy conversion facilities. As such, the proposed Project does not offer the possibility for the beneficial use of waste energy.

17.4 UNAVOIDABLE ADVERSE DIRECT AND INDIRECT ENVIRONMENTAL EFFECTS

Unavoidable adverse direct and indirect environmental impacts from the Project would be temporary and minimized through the use of mitigation measures and BMPs. See Sections 13, 14, 16, and 19 for further discussion of the Project's potential direct and indirect environmental effects, as well as planned mitigation measures.

17.5 CORRIDOR OR ROUTE ALTERNATIVES DEVELOPED DURING THE HEARING THAT MINIMIZE ADVERSE EFFECTS

LMS analyzed alternatives during selection of the proposed Corridor and Route through landowner discussions, and incorporated route deviations proposed by landowners and others in its Route to the extent practicable. As a result, LMS has identified a Project Corridor and Route that meets the needs of the Project, as well as the Commission's siting criteria, while minimizing potential impacts to landowners, existing infrastructure, and the environment.

If other corridor or route alternatives are developed during the Commission's hearing process, LMS will analyze those alternatives, as necessary.

17.6 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF NATURAL RESOURCES IF DESIGNATED

Irreversible and irremediable commitments of natural resources will be limited in nature and include such resources as steel for the pipeline and associated facilities, gravel/scoria for improvements to service roads, and fossil fuels used to power construction equipment and to provide power to Project facilities.

17.7 DIRECT AND INDIRECT ECONOMIC IMPACTS OF THE FACILITY

Direct and indirect economic impacts from Project construction include short-term employment opportunities during construction, increased local revenue for Project-related expenditures, and increased local and state tax revenues. Local property taxes would be realized on an annual basis during the Project's operational phase. Project-related local expenditures during the construction, for example, would include lodging and food, fuel, and construction materials and equipment.

17.8 EXISTING PLANS FOR OTHER DEVELOPMENTS (STATE, LOCAL, AND PRIVATE) IN THE VICINITY OF THE PROJECT

LMS has consulted with various federal, state, and local governments, as well as local businesses and residents, and has not identified any conflicts with proposed developments in the vicinity of the Project.

17.9 EFFECTS OF THE PROPOSED ROUTE ON EXISTING SCENIC AREAS, HISTORIC SITES AND STRUCTURES, AND CULTURAL RESOURCES

The Project avoids all known scenic areas, historic sites and structures, and cultural resources; therefore, the Project is not anticipated to impact these resources. For further discussion, please see Sections 13, 14, 16, and 19 of this Consolidated Application.

17.10 EFFECTS OF THE PROPOSED ROUTE ON AREAS WHICH ARE UNIQUE BECAUSE OF BIOLOGICAL WEALTH OR RARE AND ENDANGERED SPECIES HABITATS

Although suitable nesting and foraging habitat and migratory birds are present in the Study Area, the timing of Project construction (February) is such that the likelihood of migratory birds being impacted by the Project is extremely low. No other potential areas that are unique because of biological wealth or because they are habitats for rare and endangered species are located within the Corridor or crossed by the Route and thus, the Project is not anticipated to impact these resources. For further discussion, please see Sections 13, 14, 16, and 19 of this Consolidated Application.

17.11 PROBLEMS RAISED BY FEDERAL AGENCIES, OTHER STATE AGENCIES, AND LOCAL ENTITIES

Consultation letters that were sent out to agencies are listed in Section 14. Copies of this correspondence are provided in **Appendix G**. LMS has not received any responses to date as consultation is ongoing; LMS will respond to and address concerns if raised from the agencies and will provide copies of correspondence to the Commission as they are received.

18 OTHER FACTORS CONSIDERED

18.1 DESIGN CONSTRUCTION LIMITATIONS

Specific factors considered in the selection of the Corridor and Route, including design and construction limitations, are identified in Sections 2 and 12 and discussed throughout this Consolidated Application. HDD crossings will require special construction techniques, which have been incorporated into the proposed Project design (see Section 10.2). The Project will be designed, constructed, and operated in accordance with USDOT regulations governing the transportation of hazardous liquids by pipeline, which are set forth in 49 CFR Part 192.

18.2 ECONOMIC CONSIDERATIONS

In selecting the Corridor and Route, one of many factors LMS considered was facilitating construction of the Project in the most economic and efficient manner. However, Corridor and Route selection required balancing of a number of factors, as discussed specifically in Sections 2.2 and 12 of this Consolidated Application.

Other economic considerations associated with the Project include the positive direct and indirect economic benefits the Project will provide within and beyond North Dakota. As discussed in Section 17.7 of this Consolidated Application, the Project will provide short-term employment of workers during construction, increased revenues from local expenditures, and increased tax revenues.

18.3 PRESENT AND FUTURE NATURAL RESOURCE DEVELOPMENT

As discussed in Section 16.1, there are no national parks, national memorial parks, national historic sites or landmarks, national wilderness areas, or national monuments located within the Corridor and along the Route. Similarly, there are no designated or registered state parks, sites, monuments, or nature preserves along the Route. There are also no county parks, municipal parks, or parks owned or administered by other governmental subdivisions along the Project Route.

In addition, as discussed in Section 16.2, there are no wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; or grasslands within the Corridor or along the Route. Also, no designated or registered state wild or recreational rivers, game refuges, game management and management areas, forests, forest management lands, or grasslands will be crossed by the Corridor or Route.

The Project will cross range land and land used for agricultural crop production. Once construction is complete, the ROW will be restored to its prior use. Further, as discussed in Section 16.4.7, LMS will continue to work closely with existing infrastructure owners to safely construct and operate the Project and to minimize the potential for impacts to existing facilities. Thus, impacts along the Route are anticipated to be primarily temporary and minimal.

19 APPLICANT'S MITIGATION MEASURES AND POLICIES AND COMMITMENTS TO LIMIT ENVIRONMENTAL IMPACT

LMS is committed to avoiding, minimizing, and mitigating the environmental impacts of the Project. The Project has been designed and routed with these commitments in mind. The Project will be constructed and operated to meet or exceed federal, state, local, and industry safety, environmental, and operational standards.

In addition to the mitigation measures discussed throughout this Consolidated Application, LMS has developed general construction related mitigation measures to minimize impacts to natural and cultural resources from Project development. These measures meet or exceed applicable industry standards and regulatory requirements.

LMS has also developed a SWPPP for the Project (included in **Appendix B**), which addresses BMPs, temporary erosion and sediment control, inspections, and various other requirements.

20 QUALIFICATIONS OF PREPARERS

Eric Bengtson, PE, LMS – Director of Operations and Engineering

Mr. Bengtson has 23 years of experience in the design, construction and operation of midstream pipelines and surface facilities as a process engineer, project manager, engineering manager and operations manager. Eric has extensive experience in gathering, treating, and processing of natural gas and produced water systems.

Education

B.S. Chemical and Petroleum Refining Engineering, Colorado School of Mines, 1996

Registration

Registered Professional Engineer: CO

Nanette Elzinga, PE, Kleinfelder – Project Manager III

Ms. Elzinga has more than 31 years of experience in environmental permitting and review of pipeline and transmission projects, NEPA documentation, environmental construction services, and remediation. Ms. Elzinga’s pipeline experience includes compiling FERC Resource Reports, preparing Environmental Assessments and Environmental Impact Statements, preparing SPCC Plans, Facility Response Plans, and Emergency Response plans, as well as environmental compliance activities.

Education

B.S. Mechanical Engineering, Bucknell University, 1988

Registration

Registered Professional Engineer: CO, WY, UT, AZ, NM, TX, MN

Annie Daniel, Kleinfelder – Project Professional

Ms. Daniel has 11 years’ experience in environmental studies and environmental project permitting and coordination. This experience includes Federal Energy Regulatory Commission (FERC) pipeline and facility permitting, National Environmental Policy Act (NEPA) coordination and support, and environmental planning and permitting for energy projects. She specializes in federal, state, and local permitting for projects as well as coordination and communication with agencies on behalf of clients.

Education

M.S. Environmental Policy and Management, University of Denver, 2013

B.A. English, Colorado State University, 2008

Sarah Sappington, Bismarck Office Director – SWCA Environmental Consultants, Inc.

Ms. Sappington has more than 18 years of experience conducting full-spectrum projects in anthropology, archaeology, and historic archaeology to fulfill NHPA Section 106 compliance. She is permitted to lead archaeological investigations throughout the Rocky Mountain West, Great Basin, and Great Plains regions. Her responsibilities include project scoping; research design and logistics; field inventory, including excavation and evaluative testing; mapping; laboratory analysis; and report writing, including impacts analyses for NEPA compliance and documentation.

Education

A.A., Science, Ricks College, 1998

B.A., Anthropology, e: Archaeology, Brigham Young University, 2001

M.A., Anthropology, e: Archaeology, Brigham Young University, 2003

Jolene Schleicher, Archaeologist/Project Manager – SWCA Environmental Consultants, Inc.

Ms. Schleicher has more than 11 years of professional experience in the field of cultural resource management in the Great Plains, High Plains, and Great Basin. Ms. Schleicher has experience coordinating, leading, and conducting Class I and Class III Investigations conducted

for a variety of purposes, including but not limited to: well pads, access roads, pipelines, seismic studies and wind farms. Additionally, she has been a project manager for six years, managing several cultural resource and NEPA projects. Ms. Schleicher is knowledgeable in all facets of Class I and Class III inventory, site recordation, and reporting, and has experience in supervising the progress of a project from beginning to end.

Education

B.Sc., Archaeology, University College London, 2007

Rio Franzman, Sheridan Office Director – SWCA Environmental Consultants, Inc.

Mr. Franzman has extensive experience in wetland delineations, vegetation ecology, reclamation planning, threatened & endangered species management, and has written numerous technical documents for both state and federal agencies. Mr. Franzman has experience working with various mining and oil and gas producers and has successfully completed projects in Wyoming, Montana, North Dakota, Colorado, New Mexico, and Texas.

Education

B.S., Zoology, 2011. Southern Utah University.

Graduate Studies, Natural Resource/Ecology. Utah State University.

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