The logo for SWCA (Southwest Consulting & Associates) is positioned vertically on the left side of the page. It consists of the letters 'S', 'W', 'C', and 'A' stacked vertically in a large, light blue, serif font.

North System Pipeline Relocation Project Consolidated Application for a Certificate of Corridor Compatibility and Route Permit

AUGUST 2020

PREPARED FOR

NuStar Pipeline Operating Partnership, L.P.

PREPARED BY

SWCA Environmental Consultants

**NORTH SYSTEM PIPELINE RELOCATION PROJECT
CONSOLIDATED APPLICATION FOR A CERTIFICATE
OF CORRIDOR COMPATIBILITY AND ROUTE PERMIT**

Prepared for

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ACRONYMS AND ABBREVIATIONS

BMP	best management practice
NuStar	NuStar Pipeline Operating Partnership L.P.
CFR	Code of Federal Regulations
Commission	North Dakota Public Service Commission
Consolidated Application	Consolidated Certificate of Corridor Compatibility and Route Permit Application
EMP	Environmental Mitigation Plan
HDD	horizontal directional drilling
NDAC	North Dakota Administrative Code
NDCC	North Dakota Century Code
NDDOT	North Dakota Department of Transportation
NDSWC	North Dakota State Water Commission
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
PHMSA	Pipeline Hazardous Materials Safety Administration
Project	North System Pipeline Relocation Project
ROW	right-of-way
SHSND	State Historical Society of North Dakota
Study Area	1-mile-wide Corridor between the connection point of the North System Pipeline relocation segment to its reconnection point to the North System Pipeline
SWCA	SWCA Environmental Consultants
USACE	U.S. Army Corps of Engineers
USDOT	U.S. Department of Transportation

CHECKLIST FOR COMBINED CORRIDOR COMPATIBILITY AND ROUTE PERMIT APPLICATION

Authority	Description	Section(s)
Chapter 49-22 CENTURY CODE – Title 49		
49-22.1-06	Application for a Certificate for a Corridor (CC)	
1.a.	Description of size and type of facility	2.0, 9.0
1.b.	Summary of any studies of environmental impacts	14.0
1.c.	Need for the facility	4.0
1.d.	Site for energy conversion facility	N/A
1.e.	Preferred transmission (pipeline) Corridor	3.2
1.f.	Analysis of merits and detriments of facility location	1.0, 4.4, 12.0
1.g.	Mitigating measures	21.0
1.h.	Corridor evaluation pursuant to 49-22.1-06, 49-22.1-06(1)(h), and 49-22.1-09	17.0
49-22.1-07	Application for Route Permit (RP)	
1.a.	Description of type, size and design of facility	2.0, 9.0
1.b.	Description of the location	3.0
1.c.	Route evaluation relative to 49-22.1-03 and 49-22.1-09	17.0, 18.0, 19.0
1.d.	Mitigating measures	20.0
1.e.	Right-of-way preparation, construction, and reclamation	11.0
1.f.	Statement identifying how: 1) landowners informed of right-of-way acquisition; and 2) how landowners will be compensated	10.0
1.g.	Other relevant information	19.0
49-22.1-09	Factors to be considered in evaluating Corridor and Route applications	18.0
1	Research and investigation into effects of the project on public health, welfare, natural resources, and the environment	18.1
2	Effects of transmission technology and design to minimize adverse effects	18.2
3	Potential beneficial uses of waste energy from energy conversion facility	18.3
4	Unavoidable adverse direct and indirect environmental effects	18.4
5	Corridor or Route alternatives developed during the hearing which minimize adverse effects	18.5
6	Irreversible and irretrievable commitments of natural resources if designated	18.6
7	Direct and indirect economic impacts of the facility	18.7
8	Existing plans for other developments at or in the vicinity	18.8
9	Effect of project on scenic areas, historic sites and structures, paleontological and archaeological sites	18.9
10	Effect of Route on unique biological areas	18.10
11	Problems raised by federal, state, or local entities	18.11
ADMINISTRATIVE CODE – ARTICLE 69-06		
69-06-05-01	Application for a Transmission Facility Permit (CC)	
2.a.(1)	Type of facility proposed	2.0
2.a.(2)	Purpose of facility	4.0
2.a.(3)	Technology to be deployed	6.0
2.a.(4)	Type of product to be transmitted	5.1
2.a.(5)	Source of product being transmitted	5.2
2.a.(6)	Final destination of product being transmitted	5.3

Authority	Description	Section(s)
2.a.(7)	Size and design detail and any alternative size and design	9.0
2.a.(7)(a)	The width of right-of-way	9.1.1
2.a.(7)(b)	The approximate length of facility	9.1.2
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	9.2.1
2.a.(7)(g)	The estimated distance between pipeline surface structures	9.2.2
2.a.(7)(h)	The pipe size	9.1.3
2.a.(7)(i)	The maximum design for pipeline operating pressure and temperature	9.1.4
2.a.(7)(j)	The maximum design pipeline flow rate	9.2.3
2.a.(7)(k)	The number and general location of compressor or pumping stations	9.2.4
2.b.	Time schedule	8.0
2.b.(1)	Obtaining the certificate of Corridor compatibility	8.1
2.b.(2)	Obtaining Route permit	8.2
2.b.(3)	Completing right-of-way acquisition	8.3
2.b.(4)	Starting construction	8.4
2.b.(5)	Completing construction	8.5
2.b.(6)	Testing operations	8.6
2.b.(7)	Commencing operations	8.7
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 E
2.d.	Need for facility	4.0
2.e.	Description of alternatives	13.0
2.f.	Corridor width	3.1, 9.1
2.g.	Study area to enable the Commission to evaluate the factors in the Century Code Section 49-22.1-09	3.0, 17.0
2.h.	Discussion of factors in Century Code 49-22.1-09 to aid Commission's evaluation	18.0
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	20.0
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	20.0
2.m.	Qualifications of each person involved in location study	21.0
2.n.	Map identifying criteria that led to the Route location and new facilities	Appendix A
2.o.	8½ × 11 black and white map suitable for newspaper publication	Separate
2.p.	Discussion of present and future natural resource development in the area	17.3.7
2.q.	Maps and GIS data meeting PSC requirements	Appendix A
69-06-06-01	Application for Waiver of Procedures and Time Schedule	
69-06-08-02	Transmission Facility Corridor and Route Criteria	
1	Exclusion areas	17.1
1.a.	Designated or registered national: parks, memorial parks, historic sites and landmarks, natural landmarks, monuments, wilderness areas	17.1.1

Authority	Description	Section(s)
1.b.	Designated or registered state parks, historic sites, monuments, historical markers, archeological sites, nature preserves	17.1.2
1.c.	County parks and recreational areas, municipal parks, parks owned or administered by other governmental subdivisions	17.1.3
1.d.	Areas critical to the life stages of threatened or endangered animal or plant species	17.1.4
1.e.	Areas where animal or plant species that are unique or rare to this state would be irreversibly damaged	17.1.5
1.f.	Area within 1,200 feet of ICBM facility	17.1.6
1.g.	Areas within 30 feet of direct line between an ICBM launch facility and a missile alert or launch control facilities to avoid microwave interference; this restriction only applies to aboveground structures, not to surface features, such as roads, or belowground infrastructure	17.1.7
2	Avoidance areas	17.2
2.a	Designated or registered national: historic districts; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; grasslands	17.2.1
2.b.	Designated or registered state: wild, scenic, or recreational rivers; game refuges; game management areas; forest management lands; grasslands	17.2.2
2.c	Historical resources which are not specifically designated as exclusion or avoidance areas	17.2.3
2.d.	Areas which are geologically unstable	17.2.4
2.e.	Within 500 feet of a residence, school, or place of business	17.2.5
2.f.	Reservoirs and municipal water supplies	17.2.6
2.g.	Water sources for organized rural water districts	17.2.7
2.h.	Irrigated land (does not apply to underground transmission facility)	N/A
2.i.	Area of recreational significance but not designated exclusion areas	17.2.8
3	Selection criteria. Impact on:	17.3
3.a.(1)	Agricultural production	17.3.1
3.a.(2)	Family farms and ranches	17.3.2
3.a.(3)	Land economically suitable for irrigation	17.3.3
3.a.(4)	Surface drainage patterns and groundwater flow patterns	17.3.4
3.b.(1)	Sound sensitive land uses	17.3.5
3.b.(2)	Visual effect on adjacent area	17.3.6
3.b.(3)	Extractive and storage resources	17.3.7
3.b.(4)	Wetlands, woodlands, and wooded areas	17.3.8
3.b.(5)	Radio and TV reception and other communication or electronic facilities	17.3.9
3.b.(6)	Human health and safety	17.3.10
3.b.(7)	Animal health and safety	17.3.11
3.b.(8)	Plant life	17.3.12
4	Policy criteria	17.4
4.a.	Location and design	17.4.1
4.b.	Training and utilization of instate labor	17.4.2
4.c.	Economies of construction and operation	17.4.3
4.d.	Use of citizen coordinating committees	17.4.4
4.e.	Commitment of portion of transmitted product for use in state	17.4.5
4.f.	Labor relations	17.4.6
4.g.	Coordination of facilities	17.4.7

Authority	Description	Section(s)
4.h.	Monitoring of impacts	17.4.8
4.i.	Using existing or proposed rights-of-way and Corridors	17.4.9
4.j	Using existing or proposed transmission facilities	17.4.10

1 INTRODUCTION

NuStar Pipeline Operating Partnership L.P. (NuStar) is proposing to construct the North System Pipeline Relocation project (Project). The Project involves relocating the portion of NuStar's existing North System Pipeline that will be impacted by construction of the Fargo-Moorhead Diversion Channel in Cass County, North Dakota (Figure 1). The Project will involve installation of approximately 2.21 miles of approximately 10-inch inside diameter welded steel pipeline. As shown in Figure 2, the pipeline relocation Route will go directly south from its starting point for approximately 2,750 feet then turn east and go for approximately 8,945 feet to its endpoint. The segment that will be taken out of service by the relocation pipeline will be purged clean of petroleum products, capped, and abandoned in place, except for the segments directly impacted by construction of the Diversion Channel and Drain 14 which will be removed for disposal at an offsite facility.

NuStar is submitting this Consolidated Certificate of Corridor Compatibility and Route Permit Application (Consolidated Application) to the North Dakota Public Service Commission (Commission) requesting a Certificate of Corridor Compatibility and Route Permit for construction of the North System Pipeline Relocation Project.

This Consolidated Application supports NuStar's request for a Certificate of Corridor Compatibility and Route Permit and complies with Chapter 49-22.1 of the North Dakota Century Code (NDCC) and Chapters 69-06-05 and 69-06-08 of the North Dakota Administrative Code (NDAC).

2 FACILITY TYPE

The proposed Project is composed of one underground pipeline and associated facilities for the relocation of the portion of the North System Pipeline that will be impacted by construction of the Fargo-Moorhead Diversion Channel. NuStar's North System Pipeline transports refined petroleum products from the Tesoro Refinery in Mandan, North Dakota to Fargo, North Dakota, and points east.

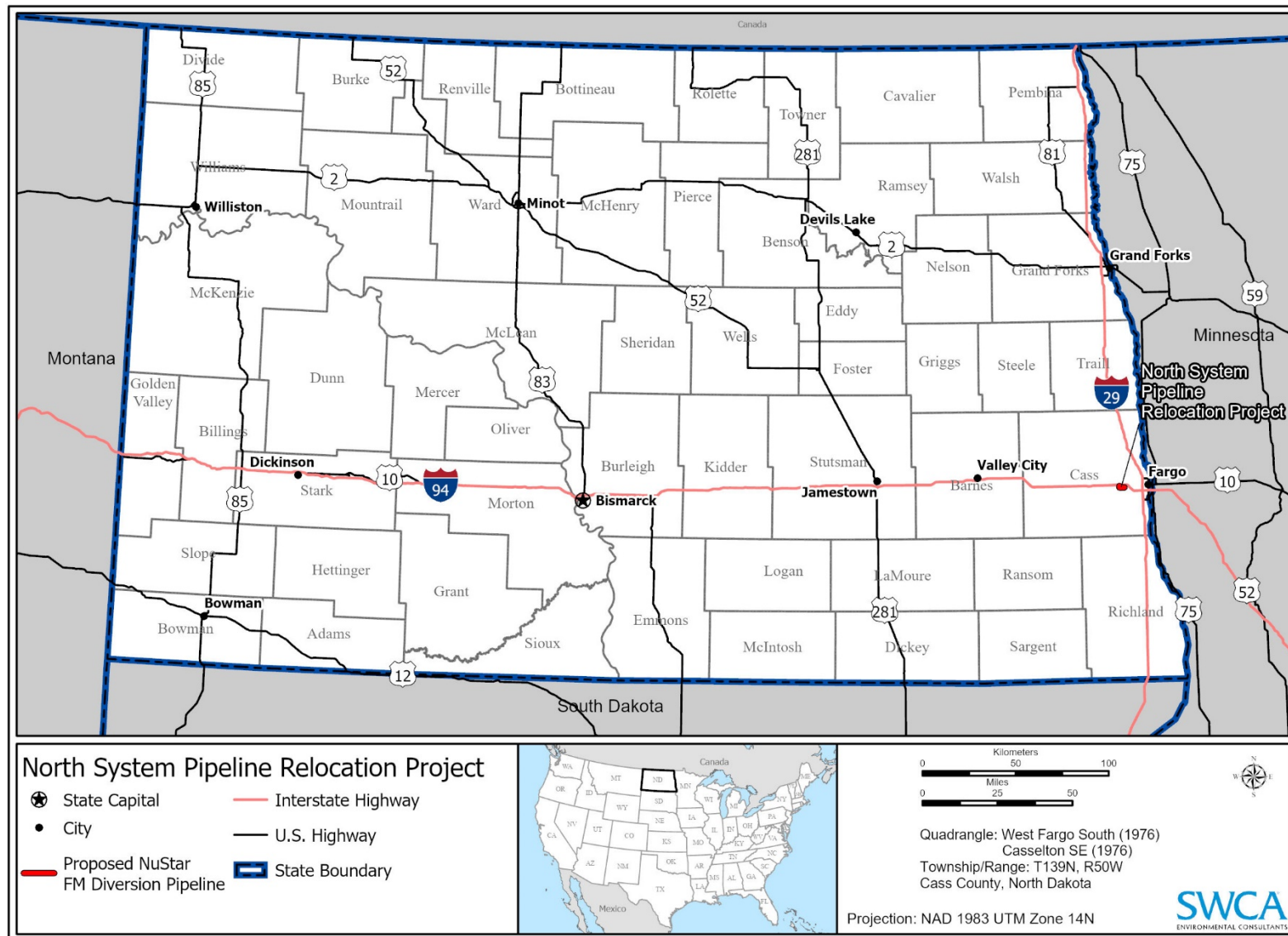


Figure 1. North System Pipeline Relocation Project location map.

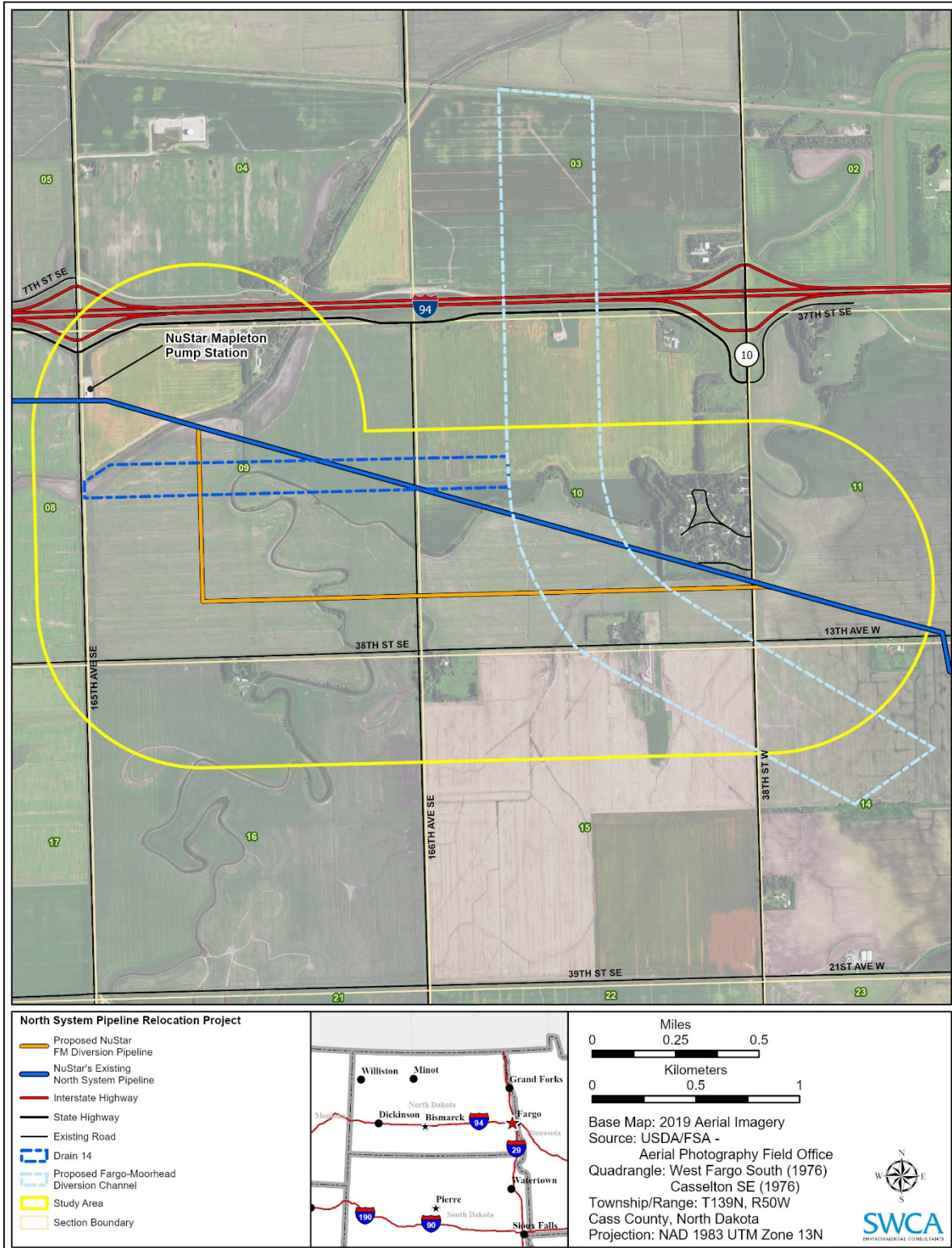


Figure 2. North System Pipeline Relocation Project route and 1-mile wide study area.

3 LOCATION

3.1 Project Study Area

NuStar defined the Project Study Area as 1.0-mile-wide (0.5 mile on either side of the proposed pipeline centerline) between the starting point of where the pipeline relocation Route leaves from the existing North System Pipeline to its endpoint where it reconnects to the existing North System Pipeline in Cass County, North Dakota (Figure 1 and Figure 2).

3.2 Proposed Location of Project Corridor and Route

NuStar is seeking approval of a 200-foot-wide pipeline corridor (Corridor) centered on the proposed alignment (Route). The Corridor is the same as the environmental field survey corridor and encompasses the temporary workspace for the Project. The pipeline relocation Route starts in the SE $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 9, Township (T) 139 North (N), Range (R) 50 West (W), heads in a southerly direction for approximately 2,750 feet to the SE $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 9, T139N, R50W where it turns to the east and extends for approximately 8,945 to its end point in the SW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 11, T139N, R50W. The location and width of the proposed Corridor are illustrated on the aerial maps in Appendix A, as is the location of the proposed Route within the proposed Corridor.

NuStar's proposed Corridor and Route are the result of a thorough site analysis, and coordination between NuStar, landowners, local officials, agencies, existing infrastructure owners, and the Fargo-Moorhead Diversion Authority. NuStar obtained and analyzed public and proprietary information to identify sensitive areas and features within the Project Study Area, such as exclusion and avoidance areas, populated areas, wetlands, waterbodies, natural resources, areas of cultural significance, and public lands. In addition, NuStar considered existing ROWs (e.g., pipelines and roads) to maximize co-location with other infrastructure, where appropriate. NuStar also sought input from agencies, local governments, and other infrastructure owners, and refined the Corridor and Route based on input received. NuStar completed civil and environmental field surveys and additional constructability reviews to further refine its Route. Ultimately, the Corridor and Route presented in this Combined Application were selected to meet 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 13.0, 17.0, and 18.0 of this Consolidated Application.

4 PURPOSE AND NEED OF THE FACILITY

Relocation of the North System Pipeline at this location is required due to impacts from construction of the Fargo-Moorhead (FM) Area Diversion Project which is designed to protect the Fargo-Moorhead-West Fargo metro area during times of extreme flooding. Construction of Drain 14 and the FM Area Diversion Channel (Figure 2) will intersect with the existing North System Pipeline in the SE $\frac{1}{4}$ SW $\frac{1}{4}$ and SE $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 9, T139N, R50W and the NE $\frac{1}{4}$ SW $\frac{1}{4}$ and SW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 10, T139N, R50W, respectively.

The proposed burial depths for the relocated section of the North System Pipeline are 39 feet below the bottom of Drain 14, 10 feet below the tributary to the Sheyenne River, 10 feet below the roadside ditches alongside 166th Avenue SE, 34 feet below the FM Area Diversion Channel, and 10 feet below the roadside ditches alongside 38th Street W. The burial depth of the existing North System Pipeline in those areas is approximately 3 feet, except where the pipeline crosses 166th Avenue SE and 38th Street W. Thus, relocation and installation of the North System Pipeline to depths below the proposed bottom elevations of Drain 14 and the FM Area Diversion Channel is required to allow construction of these drainage features and to provide buffer zones between the relocated pipeline and these features.

In addition to accommodating the FM Area Diversion Channel, the Project will provide direct benefits to the local community through potential temporary construction employment, with additional indirect benefits from Project-related purchases of local goods and services, such as fuel, food/restaurant and lodging by Project construction and operations personnel. Additionally, as part of NuStar's existing North System Pipeline, the Project will enable continued transportation of refined petroleum products from the Tesoro Refinery in Mandan, North Dakota to Fargo, North Dakota, as well as to locations further east.

A map showing the Route of the proposed NuStar North System Pipeline Relocation Project is provided in Appendix A.

5 PRODUCT

5.1 Type of Product to be Transmitted

The Project will transmit refined petroleum products (e.g., gasoline, diesel fuel).

5.2 Source of Product

The refined petroleum products come from the Tesoro Refineries in Mandan, North Dakota and Laurel, Montana.

5.3 Final Destination of Product

The refined petroleum products are transmitted to NuStar terminals in Moorhead, Sauk Centre, and Roseville, Minnesota and points east.

6 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 the following.

- Use of an external protective coating and cathodic protection to prevent external pipeline corrosion.
- Regular internal pipeline inspections using in-line inspection tools to detect internal anomalies, including corrosion or denting.
- Regular aerial and foot patrols of the permanent ROW.
- Installation of a monitoring and alarm system that continuously monitors the flow and pressure of the system via NuStar's Pipeline Control Center and triggers alarms for anything outside normal operating conditions.

Construction and installation of the pipeline will use horizontal directional drilling [HDD] to avoid impacts to wetlands and identified road and ditch crossings. This technique is discussed further in Section 11.0.

7 ESTIMATED TOTAL COST FOR CONSTRUCTION

The estimated total cost for construction is \$4.1 million.

8 SCHEDULE

8.1 Obtaining Certificate of Corridor Compatibility

NuStar requests a Certificate of Corridor Compatibility from the Commission by the Fourth Quarter 2020.

8.2 Obtaining Route Permit

NuStar requests a Route Permit from the Commission by the Fourth Quarter 2020.

8.3 Completing Right-of-Way Acquisition

NuStar has existing easements along the proposed Corridor and Route and thus, NuStar has the easement rights needed to construct the Project as proposed.

8.4 Starting Construction

Construction of the Project is scheduled to begin in the Second Quarter 2021.

8.5 Completing Construction

NuStar expects to complete construction of the Project in the Third Quarter 2021.

8.6 Testing Operations

NuStar expects to conduct hydrostatic testing of the relocation pipeline segment and associated equipment and systems in the Third Quarter 2021. Once the pipeline is placed into service, an internal inspection tool will be run to establish a baseline assessment of the pipeline.

8.7 Commencing Operations

The Project will commence operations in the Third Quarter 2021.

9 FACILITY SIZE AND DESIGN

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

9.1 Pipeline

9.1.1 *Width of Right-of-Way*

In general, the Project will utilize an 80-foot-wide construction ROW. The pipeline will be offset in the construction ROW, as shown in the Topsoil Salvage Trench and Spoil Side schematic included in Appendix A, which is an overview of the proposed pipeline construction process. Additional temporary workspace areas, ranging in size from approximately 100 feet x 100 feet up to 150 feet x 350 feet, will be required to accommodate HDD boring crossings at Drain 14, the Sheyenne River tributary, 166th Avenue SE, the FM Area Diversion Channel, and 38th Street W locations, as shown on the Project ROW map in Appendix A.

9.1.2 *Length of Facility*

The NuStar North System Pipeline Relocation Route will be approximately 2.21 miles in length.

9.1.3 *Pipe Size*

The Project will require installation of a welded steel pipeline with the following specifications:

- Conventional lay pipe: 10.750-inch outside diameter (O.D.), 0.250-inch nominal wall thickness (10.25-inch inside diameter [I.D.]), American Petroleum Institute (API) 5LX-52 Electric Resistance Welded (ERW) Steel line pipe with 14 – 16 mils fusion bonded epoxy (FBE) coating.
- HDD installed pipe: 10.750-inch O.D., 0.250 nominal wall thickness (10.25-inch ID), API 5LX-52 ERW Steel line pipe with 14 – 16 mils FBE and 30 mils of abrasion resistant overcoat (ARO).

9.1.4 **Maximum Design Operating Pressure and Temperature**

The maximum anticipated operating pressure of the entire North System Pipeline, including the relocation segment, is 1,440 pounds per square inch, with a maximum operating temperature of 100 degrees Fahrenheit.

9.2 **Aboveground Facilities**

9.2.1 **General Location of New Associated Facilities**

No new pump stations are required for this relocation project. The North System Pipeline has three existing pump stations, located in Mandan, Medina, and Mapleton, North Dakota and none of these pump stations will be modified for this pipeline relocation.

Existing block valves are present at the Mapleton Pump Station in the NW $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 9, T139N, R50W and the Sheyenne Block Valve on Township Road in the NW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 18, T139N, R49W. The Sheyenne Block Valve will be modified to provide for remote monitoring and operation from the Pipeline Control Center in NuStar's Corporate Office in San Antonio, Texas. No new block valves or new access roads will be required for the Project.

9.2.2 **Estimated Distance between Surface Structures**

The only surface structures associated with the North System Pipeline Relocation are the existing Mapleton Pump Station and the existing Sheyenne Block Valve and the distance between these two structures is approximately 4.24 miles. The Sheyenne Block Valve will be modified to provide for remote monitoring and operation from the Pipeline Control Center in NuStar's Corporate Office in San Antonio, Texas. Pipeline markers will also be placed at designated locations along the relocation Route (e.g., public road crossings) as required by local, state, and federal regulations.

9.2.3 **Maximum Design Flow Rate for Pipeline Facilities**

The maximum design flow rate for the NuStar North System Pipeline is 3,000 barrels per hour (3,024,000 gallons per day).

9.2.4 **Number and Location for Compressor and/or Pumping Stations**

The North System Pipeline has existing pump stations in Mandan, Medina, and Mapleton, North Dakota. No new pump stations will be installed for this relocation project.

10 **EASEMENT ACQUISITION**

10.1 **Informing Landowners of Easement Acquisition**

Upon identifying the preliminary relocation Route, NuStar used publicly available information to identify landowners along the proposed Route and contacted landowners via telephone to introduce and discuss the Project. During in-person meetings with landowners, the NuStar land agent presented proposed Route maps for landowner review and input. NuStar has received all necessary permissions to complete the

survey of the Corridor and Route. Additionally, NuStar has existing easement rights that authorize construction of the pipeline along the proposed Corridor and Route

10.2 Compensation for Easement

As noted above, NuStar has existing easement rights adequate to construct the Project as proposed, and landowners are being compensated per the terms of the existing easements. As applicable, landowners will also receive payment for any crop damage resulting from Project construction activities.

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

The relocated segment of the North System Pipeline will be installed using the horizontal directional drilling (HDD) method where it crosses Drain No. 14, 166th Avenue SE, the FM Diversion Channel, and 38th Street W, while the conventional trenching/pipe lay method will be used for the remainder of the Route. The proposed separation distances between the relocated section of the North System Pipeline are 39 feet below the bottom of Drain 14, 10 feet below the tributary to the Sheyenne River, 10 feet below the roadside ditches alongside 166th Avenue SE, 34 feet below the FM Area Diversion Channel, and 10 feet below the roadside ditches alongside 38th Street W. In areas where the conventional trenching/pipe lay method is used, the relocation pipeline segment will be buried a minimum of 4 feet below ground surface.

11.1 Right-of-Way Preparation and Conventional Pipeline Construction

The proposed Project will be designed, constructed, tested, operated, and maintained in accordance with applicable requirements under the USDOT regulations in Title 49 Code of Federal Regulations (CFR) Part 195, U.S. Department of Labor regulations, Occupation Safety and Health Administration requirements, and other applicable federal and state regulations. Among other design standards, 49 CFR Part 195 specifies pipeline material selection; minimum design requirements; protection from internal, external, and atmospheric corrosion; and qualification procedures for welding and operations personnel.

Prior to the start of construction, a pre-construction safety and environmental orientation will be held with all contractors and personnel involved in the Project. The orientation will review safety compliance; incident reporting; protocols for determining, correcting, and documenting safety non-compliance; and expectations for compliance enforcement. All construction personnel will be briefed and trained on all construction and environmental requirements, including laws, rules, and regulations applicable to the work. NuStar will have a designated environmental inspector and safety representative on-site throughout construction.

Construction will typically take place during daylight hours. Spill prevention measures will be in place to maintain construction personnel safety and to protect the environment.

The standard pipeline construction process includes clearing and grading the ROW; pipe stringing, bending, and welding; trenching; lowering the pipeline; padding and backfilling; hydrostatic testing; and ROW cleanup and restoration (see Pipeline Construction Sequence schematic drawing in Appendix A). Each of these activities is discussed in more detail below.

11.1.1 **Clearing and Grading**

Once the limits of the approved work area (the construction ROW and temporary workspaces), pipeline centerline, access roads, aboveground facilities, and sensitive areas (e.g., wetland and waterbody boundaries) have been staked and flagged, the construction area will be cleared and graded. The ROW will be graded to provide a relatively level surface that is wide enough to allow for the passage of heavy construction equipment.

To prevent soil mixing, topsoil will be removed and segregated from the underlying subsoil. Topsoil will be removed from the entire ROW for the entire length of the pipeline and stored along the edge of the construction ROW. Construction activities will be suspended during abnormally wet conditions to prevent excessive rutting or mixing of topsoil with subsurface soils. Refer to the Pipeline Construction Sequence and Topsoil Salvage Trench and Spoil Side schematic drawings in Appendix A for additional detail.

Fences and gates will be constructed during the clearing and grading operations to allow continuous use of pastures, grazing units, and livestock facilities. Best management practices (BMPs) such as silt fences will be installed along the ROW adjacent to wetlands and waterbodies to prevent sediment from entering these areas. Temporary erosion controls will be installed after initial disturbance of soils, where necessary, to minimize erosion. Erosion-control BMPs will be monitored by the environmental inspector and maintained by the construction contractor throughout construction.

11.1.2 **Pipe Stringing, Bending, and Welding**

Pipe will be either stored at storage yards or transported directly to the pipeline ROW. Following trenching, pipe will be strung along the ROW. A stringing crew using special trailers will move the pipe along the ROW. Pipe joint lengths are typically 40 to 80 feet long.

A pipe-bending machine will be used for making slight bends in the pipe to accommodate variations in the pipeline Route or to conform to the topography. Using a series of clamps and hydraulic pressure, the bending machine is used to make a smooth, controlled bend in the pipe. Bending will be in accordance with federal standards to ensure integrity of the bend. Pipe used for sharp bends is bent at the mill or will be forged pipeline fittings. The pipe will be pre-coated with a fusion-bonded epoxy external coating to provide corrosion protection.

The welding process joins the sections of pipe into one continuous length. All welders will be required to pass an approved qualification test; the test will use Project-specific weld procedures developed in accordance with federally adopted welding standards. All field welds will be nondestructively tested to ensure structural integrity and compliance with USDOT regulations. Once welds are approved, the 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 the pipe into the trench.

11.1.3 **Trenching**

Trenches will be excavated using a wheel trencher, backhoe or track hoe to a depth sufficient to provide the minimum cover required by federal, state, or local regulations, as well as landowner requirements. If areas of solid rock are encountered, special excavation equipment and/or techniques will be used, such as backhoe-mounted pneumatic chisels.

The amount of open trench permitted at any time during the Project will be dependent on the stability of the trench and weather conditions. In areas where livestock is confined or in cultivated fields, temporary

fences, gates, and/or bridges will be installed to provide appropriate restriction or safe access across the open trench.

11.1.4 **Pipeline Installation and Trench Backfilling**

Several side-boom tractors, or track hoes, will simultaneously lift the welded sections of pipe and lower them into the trench. Non-metallic slings will be used to protect the pipe and coating as it is raised and lowered into position. Sandbags or foam blocks will be placed at the bottom of the trench prior to laying the pipe in rocky areas to protect the pipe and coating from damage.

As necessary, trench breakers will be installed adjacent to wetlands and in steep topography to eliminate water migration along the trench. When required, the trench will be dewatered prior to lowering in the pipe. Dewatering effluent will pass through sediment filters such as hay bale structures and/or filter bags to ensure compliance with applicable water quality requirements.

After pipeline installation is complete, the subsoil will be replaced in the pipeline trench and the adjacent areas restored to the land's natural contours. Then the topsoil will be replaced in the locations from which it was originally removed. The trench line will be compacted with a wheeled-roller or other suitable construction equipment, if needed. If the excavated material contains rocks that could damage the pipe and/or coating, a rock shield will be used to protect the pipe. Topsoil will not be used for padding.

11.2 HDD Construction Method

HDD is a trenchless technique for installing pipelines or other linear utilities to avoid or minimize surface or sensitive area disruptions and to install pipe where conventional installation techniques are unfavorable. NuStar proposes to use the HDD method for the crossings of Drain 14, the unnamed tributary to the Sheyenne River, 166th Avenue S.E., the FM Area Diversion Channel, and 38th Street W.

The first step in HDD construction involves drilling a directionally controlled pilot hole along a predetermined path extending from grade at one end to grade at the opposite end. The entry and exit holes for the HDD are designed to be set-back from the area of avoidance to allow for the geometry of the drill to reach the desired target depth.

The second step consists of enlarging (reaming) the pilot hole to a size that will facilitate pulling the pipeline through the enlarged hole, which is approximately 1.5 to 2.0 times larger than the outside diameter of the pipe. Reaming of the pilot hole is accomplished by pulling reaming heads of specific diameters through the hole, in stages if necessary, to create a larger diameter hole. Each stage involves circulating drilling fluid from equipment on the surface through the drill pipe to a downhole bit or reamer, and back to the surface through the annular space between the pipe and the wall of the hole. The circulating fluid primarily consists of bentonite, which is a non-toxic, naturally occurring sedimentary clay composed of weathered and aged volcanic ash.

Prior to drilling the bore, pipe sections are welded together to fabricate a pipeline segment of sufficient length for the bore. After welding the pipe sections together and performing non-destructive weld testing (e.g., radioactive photography), the pipeline segment for the bore is hydrostatically pressure tested prior to installation. Once the bore hole has been enlarged and is stable, the welded pipeline segment is pulled through the hole. Generally, the pipe is laid out and welded on the exit side of the bore. This approach will be followed for all crossings, except the FM Area Diversion Channel and the 38th Street W. bores. Due to the length of the combined channel and the 38th Street W. bore (approximately 3,200 feet) and to minimize the land disturbance area on the exit side of the bore (i.e., east of 38th Street W.), the pipeline segments will be fabricated and tested on the entry side of the HDD bores. Once the bore has been

completed, the drill rig will be moved to the exit side and will then pull the pipeline segment through the bore from that side. Refer to the Typical Waterbody Crossing Horizontal Directional Drill schematic drawing in Appendix A for details.

11.2.1 **Waterbody and Wetland 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. As noted in the *Natural Resources and Wetland Delineation Report for the NuStar North System Pipeline Replacement Project* (SWCA Environmental Consultants [SWCA] 2020) and discussed in Section 14.2, wetlands and waterbodies were identified and delineated in the pipeline ROW. Two wetlands will be crossed by the Project using the HDD method and the crossings will be in compliance with the requirements of the USACE Nationwide Permit 12. See the Typical Wetland Crossing schematic and Typical HDD Boring Schematic drawings in Appendix A.

The proposed Project stormwater pollution prevention plan will specify measures based on BMPs that will address erosion control, equipment refueling, temporary bridge crossings, construction timing and methods, and restoration. Temporary workspaces are typically required on each side of a wetland crossing to stage construction, fabricate the pipeline, and store materials. Temporary workspaces will be located within the ROW at upland areas a minimum of 50 feet from the edge of the wetland. Sediment barriers, such as a silt fence, will be installed to prevent spoil and sediment-laden water from entering the wetland.

11.3 **Restoration Procedures**

Once construction is complete, the pipeline ROW and temporary workspaces will be restored to their prior contour and condition to the extent practicable, except that trees and shrubs will be regularly removed from the ROW to facilitate Project inspection and maintenance. All timber riprap, timber mats, and prefabricated equipment mats and other construction debris will be removed. Topsoil will be replaced, and approximate original contours restored. If required, permanent erosion-control measures will be installed as directed by the environmental inspector. Disturbed areas will be revegetated using seeding requirements specified by the Natural Resources Conservation Service or as required by the landowner except for cultivated lands. Specific restoration measures are described in the Environmental Mitigation Plan (EMP) that is provided in Appendix B.

12 **OPERATION AND MAINTENANCE**

During Project operation, pipeline pressure, temperature, and flow rate data will be monitored from the Pipeline Control Center in NuStar’s Corporate Office in San Antonio, Texas. The Control Center will provide continuous monitoring of pipeline operations data 24 hours a day, 7 days a week. Where changes in the data occur that indicate a potential issue with the pipeline or facilities, alarms will be triggered, notifying operations personnel of the potential issue. NuStar will amend the current North System Pipeline Integrity Management Plan to incorporate the relocation pipeline segment. This Integrity Management Plan complies with applicable federal regulations (49 CFR 195.400) and outlines preventive maintenance, inspection, line patrol, leak detection systems, and other pipeline integrity procedures that are implemented to ensure the safe operation of the North System Pipeline.

In the event of an emergency, NuStar will implement emergency response measures to address the situation. NuStar contracts with an experienced emergency response service provider, whose experience includes implementing emergency response protocols for releases impacting surface waters, wetlands, or

other environmentally sensitive areas. Further, as required by 49 CFR 194, NuStar will amend the existing North System Pipeline Emergency Response Plan (Plan) to include the relocation pipeline segment. The Plan outlines specific protocols to be implemented in the event of a pipeline release or other emergency.

During operations, NuStar will conduct inspections and perform maintenance activities. Maintenance activities will include making any necessary pipeline and facility repairs and removing any vegetation on the ROW that impacts the safe and reliable inspection and operation of the pipeline. Inspections and maintenance will be performed in compliance with applicable USDOT regulations.

13 ALTERNATIVES CONSIDERED

13.1 Project Alternatives

13.1.1 No Action

Under the No Action Alternative, the Project would not be constructed. Without this Project, construction of Drain 14 and the FM Area Diversion Channel by the Fargo-Moorhead Diversion Authority could not proceed. For this reason, No Action is not an alternative for the Project.

13.1.2 Route Alternatives

As discussed below, three alternatives were considered for the North System Pipeline Replacement Project, with the following considerations:

- Complying with Commission siting criteria, including exclusion area, avoidance area, selection, and policy criteria.
- Co-locating with existing infrastructure where possible.
- Avoiding and minimizing potential impacts to existing infrastructure, landowners, and environmentally sensitive areas.
- Using constructability and operational efficiencies.
- Minimizing safety concerns.
- Ensuring the ability to acquire ROW from landowners.
- Meeting USACE and FM Diversion Authority requirements.

13.1.2.1 NORTHERN ROUTE

NuStar considered a Route that went due east from the Mapleton Pump Station for approximately 8,628 feet, then turned southeast and south-southeast for another 5,872 feet for a total of 14,500 feet. This Route consisted of approximately 11,000 feet of conventional lay pipeline and 3,500 feet of HDD pipeline installation. However, NuStar did not select this route because NuStar does not have any easement rights in the northern half of Section 10, T139N, R50W and would have needed to negotiate easements with two new landowners. Additionally, this route is longer than the proposed Route.

13.1.2.2 EXISTING NORTH SYSTEM PIPELINE ROW

NuStar considered installing the replacement pipeline segment in the same ROW as the existing North System Pipeline, as shown in Figure 2. However, doing so would have resulted in total HDD boring lengths of approximately 3,100 feet and 5,100 feet for the Drain 14 and the FM Area Diversion Channel crossings, respectively. Not only would material costs be higher, but a more specialized HDD boring contractor would be required for these longer boring lengths, resulting in almost one million dollars more in project costs. Additionally, the long, angled HDD bores would not adhere to the crossing requirements of the USACE and are not preferred from a construction safety standpoint.

13.1.2.3 THE PROPOSED ROUTE

The southern Route shown in Figure 2 is the proposed Route for the Project. This Route is shorter than the northern Route, consisting of 7,419 feet of convention lay pipeline and approximately 4,301 feet of HDD pipeline installation, for a total of 11,720 feet. Additionally, NuStar has existing blanket easements for Sections 9, 10, and 11, T139N, R50W, and thus, does not need to acquire new easements for the Project.

13.1.3 Other Alternatives

Other alternatives, such as trucking or rail transportation, were not considered because they were impractical given that the Project involves a relocation of an existing pipeline.

14 ENVIRONMENTAL STUDIES

14.1 Cultural Resource Inventory

As part of the initial phase of this investigation, SWCA conducted a Class I background search of archaeological and historical literature and records for the Project Study Area and surrounding 1.0-mile-wide survey area on April 7, 2020. SWCA searched relevant records holdings at the State Historical Society of North Dakota for information regarding previously conducted cultural resource inventories and previously recorded historic and prehistoric sites located within the Project Study Area. Additionally, SWCA searched historic General Land Office survey maps dated to 1871 that show no historic roads or trails within the survey area (North Dakota State Water Commission 2019).

Based on the records search results, seven previous cultural resource inventories and investigations were conducted in the 1-mile-wide survey area between 2012 and 2018. The inventories were conducted for flood-control projects, oil and gas pipelines, road improvements, and a geothermal building. The seven previous inventories within the 1-mile-wide Project Study Area recorded an average of one resource for every 149 acres surveyed.

Results of the background search identified three previously recorded cultural resources within the 1-mile-wide Project Study Area. These cultural resources consist of one historic shed site, one prehistoric village site lead, and one prehistoric isolated find. The historic shed site (32CS5260) and the isolated find (32CSX401) have been recommended not eligible for inclusion in the National Register of Historic Places (NRHP). The remaining site lead (32CSX0209) has been left unevaluated regarding its eligibility for the NRHP. None of the previously recorded resources occur within the proposed Corridor.

SWCA conducted a Class III inventory of the 200-foot wide survey Corridor on May 21, 2020. Vegetation typically within the Project area (cultivated corn) had not yet been planted for the growing

season. Ground surface visibility during the survey was considered adequate to conduct the pedestrian survey. Impacts to the project area include plowing and cultivation for agriculture, oil and gas pipeline construction, road construction and maintenance, and installation of buried utilities within the road right-of-way. No cultural resources were encountered during the inventory.

14.2 Wetland and Waterbody Inventory

Prior to conducting field surveys, SWCA reviewed applicable National Wetlands Inventory (NWI) data, National Hydrography Dataset flowline data, and preliminary National Weather Service climatic data. NWI mapping for the region indicated the presence of wetlands within the Study Area. The results of the desktop analysis and field survey are presented in the Natural Resources Report (Bachhuber 2020), presented as Appendix D to this application.

SWCA conducted field surveys of the 200-foot-wide Corridor on May 14, 2020, to determine the potential presence and extent of wetlands and waterbodies, including those that are likely jurisdictional waters of the U.S. according to the U.S. Army Corps of Engineers (USACE) regulatory program. Wetland delineations were based on the principles and guidelines provided in the *Corps of Engineers Wetlands Determination Manual* (Manual) (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Determination Manual: Great Plains Region Version 2.0* (Supplement) (USACE 2010). According to the Manual, an area is a wetland if three specific wetland indicators—hydrophytic vegetation, wetland hydrology, and hydric soils—are present, with certain exceptions. All wetlands and waterbodies geographically referenced within the survey Corridor during field survey are depicted on the site layout maps in Appendix A. Wetland delineation data forms are provided in Appendix C of the Natural Resources Report.

SWCA delineated two palustrine emergent (PEM) wetlands within the 200-foot-wide survey Corridor, totaling approximately 0.427 acre. One of these wetlands is associated with a National Hydrography Dataset flowline that is a tributary to the Sheyenne River and may be jurisdictional, while the other wetland is the roadside ditch along the western side of 166th Avenue SE. Both wetlands will be crossed using the HDD method.

SWCA did not identify any waterbodies within the survey Corridor with an ordinary high water mark (OHWM), in accordance with USACE guidance (USACE 2008). Common identifiable indicators of an OHWM include physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter and debris; or other appropriate means that consider the characteristics of the surrounding areas. The OHWM typically represents the potential limits of USACE jurisdiction, unless there is a wetland adjacent to the waterbody (USACE 2008). Please note that the USACE has full discretion in determining the jurisdictional status of referenced wetlands and waterbodies. An unnamed tributary to the Sheyenne River is present within the survey Corridor, but this tributary did not exhibit the OHWM characteristics and was delineated as a PEM wetland.

14.3 Habitat Assessment

14.3.1 *Tree/Sapling/Shrub Inventory*

SWCA conducted field surveys of the Corridor on May 14, 2020, to confirm the presence or absence of woody vegetation. An SWCA biologist recorded all trees with a DBH equal to or greater than 1 inch and all coniferous trees and shrubs, regardless of DBH. Five peach-leaf willow (*Salix amygdaloides*) shrubs were geographically referenced within the survey Corridor and occur within the PEM wetland associated

with the unnamed tributary to the Sheyenne River, which will be crossed via HDD and will not be impacted by construction. Therefore, no trees, saplings, or shrubs will need to be replanted to fulfill the NDPSC tree and shrub mitigation requirement (NDPSC 2020). Refer to Appendix D, Natural Resources Report, for additional information on these features and mapped locations.

14.3.2 **Wildlife**

Two wildlife species listed as threatened or endangered under the Endangered Species Act have the potential to occur in Cass County (U.S. Fish and Wildlife Service 2020): northern long-eared bat (*Myotis septentrionalis*; threatened) and whooping crane (*Grus americana*; endangered).

Review of the USFWS Critical Habitat Portal (USFWS 2020c) indicates that critical habitat for threatened and endangered species has not been designated in Cass County. SWCA conducted a cursory threatened and endangered species habitat survey concurrently with the aquatic resource delineation. Additionally, SWCA assessed the Project area for the presence of migratory bird nesting habitat, as well as habitat that could be used by nesting bald or golden eagles. SWCA also conducted 0.5-mile line-of-sight surveys for bald and golden eagle nests or other raptor nests.

SWCA's biologist did not observe any primary (i.e., actual sighting) or secondary (i.e., tracks, scat, fur) indication of the presence of threatened or endangered species. The Project area lacks suitable habitat for both the northern long-eared bat and the whooping crane; therefore, the Project is not expected to result in impacts to either species. These species, their habitats, and their potential to occur in the Project area are described below. However, the lack of discovery of threatened or endangered species does not signify their non-existence within the area, but only that no primary or secondary indications of these species were recorded. Refer to Appendix D, Natural Resources Report, for additional information on these species.

14.3.2.1 **NORTHERN LONG-EARED BAT**

This medium-sized bat ranges across the eastern and north-central United States and all Canadian provinces. 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 in North Dakota, due to either no suitable hibernacula present or a lack of survey effort.

Field surveys indicate that no trees are present within the Corridor that would be suitable roosting habitat for the northern long-eared bat. Suitable roost trees were observed adjacent to the Project Study Area, and suitable foraging habitat is present along the wetlands within the Project Study Area that may be used by northern long-eared bats. However, because no suitable roost trees are present within the survey Corridor, no impact to the northern long-eared bat is anticipated.

14.3.2.2 **WHOOPING CRANE**

The USFWS indicates that North Dakota is within the whooping crane migration Corridor and that the species may stop over in suitable habitat, which includes cropland and pastures, wet meadows, shallow marshes, and waterbodies (USFWS 2010). The Project is approximately 50 miles east and outside of the 95% whooping crane migration Corridor at its closest point, which indicates that it is relatively less likely for the species to be present within the survey Corridor than in areas closer to the migration Corridor. Review of the USFWS Whooping Crane Tracking Project Database did not return any whooping crane

observation records within the Project Study Area, with the closest whooping crane observation being in the spring of 1976, at a location approximately 23 miles to the southwest of the Project (USFWS 2019c).

Field surveys indicate that agricultural land and wetlands within the Project Study Area could provide potentially suitable stopover habitat for the whooping crane. However, because the Project is outside of the whooping crane migration Corridor, the potential for the whooping crane as an overhead migrant within the Project is low during spring and fall and is not expected during summer or winter. SWCA recommends that if a whooping crane(s) is sighted within 1.0 mile of the Project, NuStar should stop construction in that area until the whooping crane(s) leaves the area and NuStar should notify the USFWS of the sighting. Therefore, no impact to the whooping crane is anticipated.

14.3.3 ***Migratory Bird Treaty Act***

The Migratory Bird Treaty Act makes it illegal for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to federal regulations. The migratory bird species protected by the MBTA are listed in Title 50 Code of Federal Regulations (CFR) Part 10.13. Review of land cover data and aerial imagery as well as the results of field surveys indicate that limited suitable habitat for migratory birds exists within the Project area which mostly consists of cultivated cropland with limited potential for use by nesting migratory birds; however, some limited wetland habitat is present that could be used by migratory birds. NuStar has committed to crossing wetland habitat using the HDD method and therefore, impacts to migratory birds and/or their nesting habitat are not anticipated. Refer to Appendix D, Natural Resources Report, for additional information on migratory birds.

14.3.4 ***Bald and Golden Eagle Protection Act Consultation***

The Bald and Golden Eagle Protection Act provides for the protection of the bald eagle and the golden eagle (as amended in 1962) by prohibiting the take, possession, sale, purchase, barter; offer to sell, purchase, or barter; transport; export; or import of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit (16 United States Code 66a; 50 CFR Part 22). “Take” includes to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb. The bald eagle (*Haliaeetus leucocephalus*) feeds on fish and carrion and typically roosts in large trees near a water source. Bald eagle nesting habitat typically consists of any mature stands of conifer or cottonwood trees in association with rivers, streams, reservoirs, lakes, or any significant body of water. The bald eagle primary range within the state includes eastern North Dakota and the Missouri River Corridor (Dyke et al. 2015) and Cass County is included in the primary range for this species. The bald eagle is both a year-round resident, as well as a migrant species, in the state. Bald eagles in eastern North Dakota are usually observed along the Red River and Sheyenne River.

A 2009 statewide census conducted by the North Dakota Game and Fish Department (NDGFD) documented 66 nests that were thought to be occupied by bald eagles, four of which occurred in Cass County (Johnson 2009). The number of recent bald eagle observations in the vicinity of the Project include: one observation approximately 1.5 miles east of the Project area in 2017; one observation approximately 1.8 miles north of the Project in 2018; and several recent observations near the West Fargo Water Treatment Plant, approximately 2 miles northeast of the Project between 2017 and 2019 (AKN 2020). Therefore, the potential exists for bald eagles to pass through the Project Study Area, but no bald eagles or nests were observed during the field surveys.

Golden eagles favor partially or completely open country, especially around mountains, hills, and cliffs. They use a variety of habitats ranging from arctic to desert, including tundra, shrublands, grasslands, coniferous forests, farmland, and areas along rivers and streams (Cornell Lab of Ornithology 2019).

Golden eagles are uncommon in North Dakota and the species' primary and secondary ranges in the state are over 169 miles west of the Project area, from the Missouri River Valley westward, including the badlands of western North Dakota and the Lake Sakakawea breaks (Dyke et al. 2015). The Project is within the migration range for this species and thus, there is the potential for golden eagles to pass through the Project area at low frequencies during spring and fall migration (Cornell Lab of Ornithology 2019), though nesting is not likely. Refer to Appendix D, Natural Resources Report, for additional information on these species.

15 CONSULTATION

On June 1, 2020, SWCA, on behalf of NuStar, sent letters to various agencies and officials, including those identified in NDAC Section 69-06-01-05, providing information regarding the Project and requesting input. The responses received to-date are summarized below. Please refer to Appendix E Agency Correspondence/Consultation, for copies of the consultation letters sent and the agency responses received, as summarized below.

15.1 North Dakota Geological Survey

In a letter dated June 11, 2020, the ND Geological Survey stated that they had reviewed the alignment of the planned pipeline Route and did not note any concerns with the project at this time.

15.2 North Dakota Department of Environmental Quality

In a letter dated June 10, 2020, the NDEQ stated that environmental impacts from the proposed construction will be minor and can be controlled by proper construction methods. The NDEQ provided the following comments regarding construction of the project:

1. Care is to be taken during construction activity near any water of the state to minimize adverse effects on a water body.
2. Projects disturbing one or more acres are required to have a permit to discharge stormwater runoff until the site is stabilized by reestablishment of vegetation or other permanent cover.
3. All solid waste materials must be managed and transported in accordance with the state's solid and hazardous waste rules.
4. Projects that involve construction of pipelines should select locations that minimize the potential for impacts to human health and the environment during and after construction by avoiding, when possible, source water protection areas and sensitive surface and groundwater environments.

NuStar has designed and will construct the Project in a manner consistent with the NDDEQ's recommendations.

15.3 North Dakota State Historic Preservation Office

In a letter dated June 15, 2020, the SHSND recommended a Class I Inventory and Class III (pedestrian) survey of the pipeline Route be conducted. SWCA completed a Class I background search of files maintained at the State Historical Society of North Dakota and historic survey plats for the Study Area on April 7, 2020 and completed a Class III cultural resource inventory on May 25, 2020. The results of these

investigations are discussed in Section 14.1. In the cultural resources report submitted to the SHSND on July 14, 2020, SWCA recommended that a determination of *No Significant Sites Affected* be issued for the Project (see Appendix E).

SWCA completed an Unanticipated Discovery Plan and submitted it to SHSND on July 10, 2020, as well (Appendix E).

15.4 City of West Fargo

In a letter dated June 19, 2020, the City of West Fargo Planning and Zoning Commission recommended locating the proposed pipeline alignment along section lines or half-section lines to better accommodate future development and minimize costly or dangerous construction activities when infrastructure is extended into this area. On July 13, 2020, NuStar and the City of West Fargo Planning and Zoning Commission had a conference call to discuss the Project and the recommendation. On July 14, 2020, NuStar sent a letter to the Planning and Zoning Commission providing additional information regarding its Route development process and the rationale for selecting the proposed Route. On July 15, 2020, the City Engineer and the Director of Planning and Zoning sent a letter to NuStar indicating that the Planning and Zoning Commission was withdrawing its prior alignment recommendation.

15.5 Maple River Water Resource District

In a letter dated June 29, 2020, the Maple River Water Resource District stated that a Utility Permit from the Maple River Water Resource District will be required for the crossing of Cass County Drain No. 14 and provided contact information to obtain said permit. NuStar will obtain the Utility Permit, as required.

15.6 North Dakota State Water Commission

In a letter dated June 30, 2020, the North Dakota State Water Commission stated that the Project had been reviewed by State Water Commission staff and had the following comments:

1. The state has no formal permitting authority for the identified and/or mapped floodplains in the proposed project area and suggested working closely with the local Floodplain Administrator.
2. The Office of the State Engineer (OSE) Engineering and Permitting Section reviewed the project Route and determined that the project Route traverses over or through surface water resources. The OSE requests to be notified regarding the proposed project's impacts, if any, to water resources such as watercourses, agricultural drains, and wetlands. Any alterations, modifications, improvements, or impacts to those water resources may require a drainage permit(s) or a construction permit(s) from the OSE.
3. The project appears to intercept Cass County Drain No. 14 and a diversion located in the N½ of Section 9, T139N, R50W, Cass County, which is permitted under Construction Permit No. 2151 (see attached). The OSE requests to be notified of any alterations, modifications, or improvements to these structures as drainage and (or) construction permit(s) may be required.
4. Initial review indicates the project does not require a conditional or temporary water appropriation permit; however, if surface water or groundwater will be diverted for construction of the project, a water permit will be required per North Dakota Century Code § 61-04-02, and suggest consulting with the OSE Water Appropriations Division with any questions.

In a July 13, 2020 letter, NuStar responded with the following information:

1. The Cass County Floodplain Administrated has been contacted to determine if a Floodplain Development Permit would be required. Project information was sent to Mr. Bob Staloch (Cass County Floodplain Administrator) on July 30, 2020 and in an August 3, 2020, telephone call, Mr. Staloch indicated that a Floodplain Development Permit was required and would be issued for the Project, but that a building permit would not be required for the Project.
2. The proposed pipeline route encounters two Palustrine Emergent (PEM) wetlands associated with the unnamed tributary to the Sheyenne River in Section 9, T139N, R50W and the western roadside ditch along 166th Avenue SE for a total of approximately 0.427 acre in size. NuStar is proposing to install the pipeline underneath the wetland areas using the horizontal directional drilling (HDD) method and thus, there should be no impacts to surface water resources from the pipeline construction.
3. The proposed relocation pipeline Route will not intersect the existing Drain No. 14, but the Route would cross the proposed location of the new Drain No. 14. This crossing will be constructed using the horizontal directional drilling (HDD) method and has been designed to provide a minimum of 15 feet of separation between the bottom of the new drain and the pipeline. Thus, no alteration, modification, or improvement to either the existing or future drains is anticipated.
4. Shallow groundwater or surface water diversions may be required to facilitate pipeline construction. If construction dewatering is required, said discharges would be permitted under the NDPDES General Permit for Temporary Discharges (NDG07000), issued by the North Dakota Department of Environmental Quality, and the Water Appropriations Division of the OSE will be contacted to determine if a temporary appropriation permit would be required for these diversions.

16 IDENTIFICATION OF POTENTIAL PERMITS/APPROVALS

A permitting matrix was created showing potential federal, state, and local permits that may be needed for construction of the Project, as summarized in Table 1.

Table 1. Potential Permits/Approvals

Agency	Permit/Approval	Status
Federal		
U.S. Army Corps of Engineers	Section 404 permit for dredge/fill in jurisdictional wetlands	Project qualifies for Nationwide Permit 12 and a preconstruction notification is not required.
U.S. Fish and Wildlife Service	Consultation and review of the proposed Project regarding impact to federally threatened and endangered species, migratory birds, and bald and golden eagles	Consultation requested and received.
State		
North Dakota Public Service Commission	Certificate of Corridor Compatibility and Route Permit	Application pending.
North Dakota Department of Environmental Quality, Water Quality Division	National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction Activity	Submit Notice of Intent at least 7 days prior to construction and develop/implement Stormwater Pollution Prevention Plan.

Agency	Permit/Approval	Status
	NPDES General Permit for Temporary Dewatering/Hydrostatic Testing	Submit Notice of Intent at least 30 days prior to discharge date.
State Historical Society of North Dakota (SHSND)	Cultural and historic resources consultation and review. Unanticipated Discovery Plan (UDP) for discovery of human/historic remains.	Class I inventory and Class III pedestrian survey completed for the Corridor and SHSND concurrence was received. UDP submitted to SHSND for review.
North Dakota State Water Commission	Temporary Water Appropriation Permit	May be required for construction dewatering. Requested clarification from the State Water Commission.
Cass County	County Road Crossing Permits.	To be obtained prior to Project construction.
Maple River Water Resource District	Utility Permit	Required for crossing the proposed location for the new Cass County Drain No. 14.

17 SITING CRITERIA

17.1 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 2.

Table 2. Exclusion Areas Summary

Feature	Within Corridor (Y/N)	Route Crosses (Y/N)	Description	Section Addressed
Designated or registered national parks, memorial parks, historic sites and landmarks, natural landmarks, monuments, and wilderness areas.	N	N	N/A	17.1.1
Designated or registered state parks, historic sites, monuments, historical markers, archaeological sites, and natural preserves.	N	N	N/A	17.1.2
County parks and recreational areas, municipal parks, and parks owned or administered by other governmental subdivisions.	N	N	N/A	17.1.3
Areas critical to the life stages of threatened or endangered animal or plant species.	N	N	N/A	17.1.4
Areas where animal or plant species that are unique or rare to this state would be irreversibly damaged.	N	N	N/A	17.1.5
Areas within 1,200 feet of the geographic center of an intercontinental ballistic missile (ICBM) launch or launch control facility.	N	N	N/A	17.1.6
Areas within 30 feet on either side of a direct line between an ICBM launch facility and a missile alert or launch control facilities to avoid microwave interference. This restriction only applies to aboveground structures, not to surface features, such as roads, or belowground infrastructure.	N	N	N/A	17.1.7

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

No designated or registered national parks, memorial parks, historic sites and landmarks, natural landmarks, monuments, and wilderness areas would be crossed by the Corridor or Route. See also Section 14.1 of this Consolidated Application.

17.1.2 ***Designated or Registered State Parks, Historic Sites, Monuments, Historical Markers, Archaeological Sites, and Natural Preserves***

No designated or registered state parks, historic sites, monuments, historical markers, archaeological sites, and natural preserves would be crossed by the Corridor or Route. See also Section 14.1 of this Consolidated Application.

17.1.3 ***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.

17.1.4 ***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 (see Section 14.3.2).

17.1.5 ***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 (see Sections 14.3.3 and 14.3.4).

17.1.6 ***Areas within 1,200 Feet of the Geographic Center of an Intercontinental Ballistic Missile Launch or Launch Control Facility***

The Corridor and Route are not located within 1,200 feet of the geographic center of an intercontinental ballistic missile launch or launch control facility.

17.1.7 **Areas within 30 Feet on Either Side of a Direct Line between Intercontinental Ballistic Missile 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 intercontinental ballistic missile launch or launch control facility.

17.2 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 in relation to the Corridor and Route is provided in Table 3.

Table 3. Avoidance Areas Summary

Feature	Within Corridor (Y/N)	Route Crosses (Y/N)	Description	Section Addressed
Designated or registered national historic districts; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; and grasslands.	N	N	N/A	17.2.1
Designated or registered state wild, scenic, or recreational rivers; game refuges; game management areas; management areas; forests; forest management lands; and grasslands.	N	N	N/A	17.2.2
Historical resources which are not specifically designated as exclusion or avoidance areas.	N	N	N/A	17.2.3
Areas which are geologically unstable.	N	N	N/A	17.2.4
Within 500 feet of a residence, school, or place of business.	N	N	N/A	17.2.5
Reservoirs and municipal water supplies.	N	N	N/A	17.2.6
Water sources for organized rural water districts.	N	N	N/A	17.2.7
Areas of recreational significance which are not designated as exclusion areas.	N	N	N/A	17.2.8

17.2.1 **Scenic or Recreational Rivers; Wildlife Refuges; and Grasslands**

No designated or registered national historic districts; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; or grasslands are crossed by the Corridor and Route.

17.2.2 Designated or Registered State Wild, Scenic, or Recreational Rivers; Game Refuges; Game Management Areas; Management Areas; Forests; Forest Management Lands; and Grasslands

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.

17.2.3 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 (see Section 14.1).

17.2.4 Areas that are Geologically Unstable

The Corridor and Route do not cross geologically unstable areas.

17.2.5 Within 500 Feet of a Residence, School, or Place of Business

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

17.2.6 Reservoirs and Municipal Water Supplies

No reservoirs and municipal water supplies were identified in the Corridor or Route.

17.2.7 Water Sources for Organized Rural Water Districts

No water sources for organized rural water districts are present in the Corridor or Route.

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

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

17.3 Selection Criteria

17.3.1 Agricultural Production

The Project Route principally crosses cultivated agricultural lands, with the predominant land use comprised of planted corn, with tall prairie grasses in the undeveloped areas immediately surrounding stream and roadsides. Construction of the Project would temporarily impact approximately 2.11 acres of prime farmland and approximately 19.43 acres of prime farmland, if drained, for a total of 21.34 acres (Table 5). Once construction is complete, the ROW may return to its prior agricultural use. As such, impacts to agricultural production along the Route will be minimal and temporary.

Table 4. Farmland in Study Area

Farmland Classification	Area in Survey Corridor		Area in ROW	
	Acres	%	Acres	%
All Prime Farmland	5.88	10.89	2.11	9.89
Prime Farmland, if Drained	48.16	89.11	19.23	90.11
Total	54.05	100.0	21.34	100.0

17.3.2 **Family Farms and Ranches**

A total of three family farms or ranches are crossed by the Project Route. Construction impacts to family farms and ranches will be short term and minor, with the primary impact being the use of the land within the work areas during construction activities as well as potentially diminished yields the next growing season following construction. NuStar will implement mitigation measures to minimize potential impacts to family farms and ranches, as outlined in the EMP (Appendix B).

No long-term or permanent impacts are expected to family farms and ranches. Post-construction restoration will return the ROW to pre-construction contours, and farming or ranching operations will continue over the operational ROW. NuStar has existing easements and landowners will be compensated in accordance with the terms of those easements.

17.3.3 **Land Economically Suitable for Irrigation**

NuStar has not identified any center-pivot irrigation within the Project Corridor or Route, or any land that is planned to be irrigated. Thus, the Project is not anticipated to impact irrigated land or any irrigation systems. If irrigation systems are encountered, NuStar will compensate the owner(s) and/or repair any damages to the systems that may result from Project construction activities.

17.3.4 **Surface Drainage Patterns and Groundwater Flow Patterns**

17.3.4.1 **SURFACE DRAINAGE**

Surface drainage patterns will not be altered by construction of the pipeline. Swales, ditches, and other natural drains will be restored to approximate pre-construction contours after construction is complete. The pipeline will be installed at a depth that will not interfere with surface water flow patterns or future maintenance efforts by landowners.

17.3.4.2 **GROUNDWATER FLOW PATTERNS**

All of Cass County is covered with glacial drift that ranges in thickness from 132 to 470 feet, with Lake Agassiz plain deposits occupying approximately the eastern one-half of the county (Klausing 1968). In the Project area, the lake plain deposits are comprised of two units: an upper silty yellow clay deposit that ranges in thickness from 0 to about 50 feet; and, a lower silty, olive-gray, plastic clay deposit that ranges in thickness from 0 to about 80 feet.

As described by Klausing (1968), the West Fargo Aquifer underlies a portion of the Project Study Area in Sections 10 and 11, T139N, R50W and is described as a buried glaciofluvial deposit that extends in a north-south direction and ranges in thickness from 0 to 140 feet, with an average thickness of 60 feet. The aquifer material is composed of sediments ranging in size from fine sand to boulder-sized but is

predominantly fine- to coarse-grained sand. This is an artesian aquifer system that is confined by the overlying lake plain silt and clay deposits which appear to range in thickness from 60 to 90 feet in the Project study area. The basal confining unit may be composed of either weathered granite, Cretaceous-age shale and/or sandstone, or glacial till.

The groundwater flow direction in the Project study is principally to the east towards the Sheyenne River and centers of groundwater pumping operated by the City of West Fargo and Cass Rural Water Users, Inc. Local groundwater flow directions along the Route would be towards the unnamed tributary to the Sheyenne River and nearby agricultural drains.

Any construction impacts that may occur to groundwater flow would be in surficial aquifers and would be highly localized and temporary in nature. No permanent impacts to groundwater flow are expected because of the Project.

17.3.5 Sound Sensitive Land Uses

The proposed Project is in a sparsely populated rural agricultural area in Mapleton Township and is partially within the extraterritorial jurisdiction zone of the City of West Fargo. Interstate Highway 94 is less than one mile to the north, while 165th Avenue SE is near the eastern end of the Project and 38th Street W is at the western end of the Route. Sound intensity is measured by the decibel; the A-weighted scale is used in most noise ordinances and standards and approximates the range of human hearing by filtering out lower frequency noises, which are not as damaging as higher frequency noises. In rural areas, background noise is generally at levels of 40 to 50 A-weighted decibel (McCain and Associates, Inc. 2011), which is anticipated for the Project Study Area. Due to the surrounding transportation corridors, the background noise level may be higher than this range.

Construction-related activities are expected to be short-term and will occur during the daytime; therefore, impacts to area residents will be minimal. During operations, noise will be limited to occasional vehicle access to the ROW for inspection and/or maintenance activities, so impacts will be negligible. NuStar and its contractors will comply with all state and local noise requirements during construction and operation of the Project.

17.3.6 Visual Effect on Adjacent Areas

Impacts to visual resources because of Project development are assessed by the degree of modification to the existing landscape and sensitivity of the viewer. Changes to the line, form, and character of the existing landscape can result in a level of contrast that will attract the attention of those in the area. The number of viewers, their activities, and the extent their activities are related to the visual quality of the area and determine the level of viewer sensitivity.

The Project is in a sparsely populated rural agricultural area and viewers of the landscape will be limited to area residents and travelers along local roadways. Based on the number of viewers and the duration of their views, viewer sensitivity is considered low.

The relocated pipeline will be buried, with no aboveground facilities along the Route. During construction, vegetation will be removed, temporarily resulting in distinct contrasting lines within the landscape. However, once vegetation is re-established or agricultural operations resume within the construction ROW, there will be no visual impacts from the Project.

17.3.7 **Extractive and Storage Resources**

No mineable coal, geothermal or uranium resources, clay deposits, or sand or gravel deposits are in the Study Area (North Dakota Department of Mineral Resources 2019b). Therefore, construction and operation of the proposed Project will not impact access to, or the operations of, mineral resource extraction.

17.3.8 **Wetlands, Woodlands, and Wooded Areas**

A desktop review was completed of the Study Area and included the review of aerial imagery, NWI data, and LANDFIRE dataset to identify any wetlands, woodlands, and wooded areas with the Study Area. Field surveys were conducted on May 14, 2020, within the Corridor. Please refer to Sections 14.2 and 14.3 for further discussion on the results of the desktop analysis and field surveys with respect to these resources.

SWCA counted a total of 5 peach-leaf willow (*Salix amygdaloides*) shrubs in one of the PEM wetlands. Because wetlands will be crossed using the HDD method, there will be no impact to these trees from pipeline construction and thus, no trees or shrubs will be needed to be replanted to fulfill the Commission's mitigation requirement.

17.3.9 **Radio and Television Reception and Other Communication or Electronic Facilities**

No radio and television reception and/or other communications and electronic facilities are located within the Corridor or Route. NuStar does not anticipate the Project will impact radio and television reception and/or other communications and electronic facilities.

17.3.10 **Human Health and Safety**

Construction of the proposed Project could generate a possible risk to local citizens' public safety from increased traffic along rural roadways. Increased truck traffic and transport of heavy equipment will be temporary during construction. NuStar contractors will obtain requisite local oversize and overweight permits, as required, for the transport of equipment and materials on local and state highways. If required, pilot vehicles will be utilized to escort oversize and overweight vehicles while travelling on public roadways.

Transport of petroleum products by pipeline involves some risk in the event of an accident and the release of the product. To minimize this risk, the NuStar North System Pipeline is currently and will continue to be remotely monitored using NuStar's Pipeline Control Center 24 hours a day, 7 days a week. In addition, routine pedestrian and aerial patrols will continue to be conducted, as will internal inspections using in-line inspection tools. NuStar will continue to comply with the safety measures set forth in 49 CFR Part 195, as required by PHMSA.

To minimize potential impacts during operation, the Emergency Response Plan will be updated, as needed. In addition to the Emergency Response Plan, the Project will be incorporated into NuStar's existing Pipeline Integrity Management Plan, which outlines pipeline integrity management procedures to be implemented during operation.

17.3.11 ***Animal Health and Safety***

No threatened or endangered species were observed in the Study 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.

17.3.12 ***Plant Life***

Plants species currently inhabiting the Corridor are common. Impacts to plant species in the Study Area from the Project are anticipated to be temporary and minimal.

17.4 **Policy Criteria**

17.4.1 ***Location and Design***

NuStar selected the Corridor and Route based on several factors, including environmental, engineering, and constructability considerations.

NuStar 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 siting process to avoid or minimize impacts to sensitive resources.

17.4.2 ***Training and Use of In-State Labor***

NuStar expects to employ approximately 20 to 30 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 for hire within the state, contractors may need to employ workers from out-of-state.

17.4.3 ***Economies of Construction and Operation***

Direct and indirect economic benefits to the state of North Dakota resulting from construction of the proposed Project are discussed in Sections 17.4.2 and 18.7. Once the Project is constructed and online, NuStar expects annual maintenance and operation costs to be minimal, as the Project will be part of an existing operating pipeline system.

17.4.4 ***Use of Citizen Coordinating Committees***

NuStar worked closely with local officials, agencies, utility companies, and others throughout development of the proposed Project. 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.

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

A portion of the refined petroleum products transported by the North System Pipeline will be used in eastern North Dakota, while the remainder will be transported to Minnesota and points east.

17.4.6 Labor Relations

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

17.4.7 Coordination of Facilities

NuStar performed a centerline survey of the Route and identified all third-party entities/utilities that will be encountered (e.g., petroleum, water, electric, highways). NuStar then contacted each entity to obtain its respective crossing and encroachment guidelines and requirements. NuStar has incorporated these requirements into the Project design and will work closely with each entity during construction and future operation and maintenance to ensure the safe construction and operation of the Project around these adjacent utilities/entities. Refer to the Typical Foreign Pipeline Crossing schematic in Appendix A for more information.

17.4.8 Monitoring Impacts

NuStar is committed to the protection of the environment as well as public and employee safety. 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. An EMP has been developed specifically for this Project (see Appendix B).

In addition, NuStar will provide construction oversight to confirm contractor compliance with mitigation measures, landowner agreements, and applicable permits. NuStar will have an inspector who is knowledgeable of the environmental mitigation requirements for the Project. The inspector will have the authority to stop construction activities and order corrective mitigation and will maintain appropriate compliance documents.

During Project operation, NuStar will conduct regular aerial and foot patrols of the ROW to identify issues of concern, including operational issues and ROW encroachment. In addition, NuStar's Pipeline Control Center will continuously monitor pressure, temperature, and product flow 24 hours a day, 7 days a week, with information transmitted to NuStar's Corporate Office located in San Antonio, Texas, which will promptly respond to any anomalies. NuStar will monitor landowner and community concerns throughout Project operations and respond appropriately.

17.4.9 Using Existing and Proposed Rights-of-Way and Corridors

NuStar's proposed Route was sited based on a number of factors, including constructability, compliance with siting requirements, and cost. Three separate Routes were considered: (1) the northern Route consisting of approximately 14,500 feet of relocated pipe (3,500 feet of HDD and 11,000 feet of conventional lay pipe); (2) within the existing North System Pipeline ROW consisting of approximately 8,700 feet of relocated pipe (8,200 feet of HDD and 500 feet of conventional lay pipe); and, (3) the

southern Route consisting of approximately 11,720 feet of relocated pipe (4,301 feet of HDD and 7,419 feet of conventional lay pipe).

Installing the relocated pipeline in the same ROW as the existing North System Pipeline was not selected because it would have required long, angled HDD bores of Drain 14, the Diversion Channel, and 38th Street West, which would not adhere to the crossing requirements of USACE and is not preferred from a construction safety standpoint.

Additionally, NuStar analyzed following section lines and quarter section lines. However, following such features was not preferable because it would have resulted in crossing Drain 14 at a location that would not be allowed by the USACE, would be unacceptable for pipeline maintenance and safety, would increase the overall length of the line compared to the proposed Route, and would place the pipeline within 500 feet of residences.

NuStar also analyzed routing in terms of the existing roadways. NuStar's proposed Route parallels both 165th Avenue SE and 38th Street West, rather than diagonally crossing these roads. NuStar also selected a Route set back from 165th Avenue SE and 38th West to minimize potential impacts on future development along these roadways when compared to being adjacent to the roads.

17.4.10 *Other Existing or Proposed Transmission Facilities*

With the exception of the North System Pipeline, there are no other existing or proposed transmission facilities in the Project area.

18 EVALUATION OF NDCC SECTION 49-22.1-09 FACTORS

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

18.1 Effects on Public Health, Welfare, Natural Resources, and the Environment

Please see Sections 13.0, 14.0, 17.0, and 18.0 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.

18.2 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 HDD bores at road 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, the Project will be monitored remotely via NuStar's Pipeline Control Center 24 hours a day, 7 days a week.

18.3 Potential for Beneficial Uses of Waste Energy from a Proposed Energy Conversion Facility

The Project does not include any energy conversion facilities; therefore, the potential for beneficial uses of waste energy from a proposed energy conversion facility does not apply.

18.4 Unavoidable Adverse Direct and Indirect Environmental Effects

Unavoidable adverse direct and indirect environmental impacts from the Project will be temporary and minimized using mitigation measures and BMPs. See Sections 12.0, 13.0, 16.0, and 17.0 for further discussion of the Project's potential direct and indirect environmental effects, as well as planned mitigation measures.

18.5 Corridor or Route Alternatives Developed During the Hearing that Minimize Adverse Effects

A description of the Route selection process is presented in Section 13.0. In coordination with the FM Diversion Authority and the USACE, NuStar analyzed three Route alternatives, ultimately selecting the proposed Corridor and Route based on existing land rights, evaluation of constructability characteristics, minimization of environmental impacts, compliance with applicable routing requirements, and cost. As a result, NuStar has identified a Project Corridor and Route that meet 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, NuStar will analyze those alternatives, as necessary.

18.6 Irreversible and Irretrievable Commitments of Natural Resources if Designated

Irreversible or irretrievable commitments of natural resources include steel for the pipeline and ancillary facilities; and petroleum products to power construction equipment, and other pipeline facilities.

18.7 Direct and Indirect Economic Impacts of the Facility

Direct and indirect economic impacts from Project construction include short-term employment opportunities during construction and increased local revenue for Project-related expenditures. Project-related local expenditures during the construction, for example, will include lodging and food, fuel, and construction materials and equipment. Taxes will be paid on an annual basis during the Project's operational phase.

18.8 Existing Plans for Other Developments (State, Local, and Private) in the Vicinity of the Project

NuStar has been in consultation with federal, state, and local governments, landowners, existing infrastructure owners, and water districts, and NuStar has not identified any potential conflicts with existing or planned developments. NuStar will obtain all necessary permits and approvals for the Project from federal, state, and local governments and agencies, and will comply with applicable local land use requirements. Improvements to 166th Avenue SE are currently planned, but the Project will not impact the planned improvements.

18.9 Effects of the Proposed Route on Existing Scenic Areas, Historic Sites and Structures, and Cultural Resources

No scenic areas, historic sites or structures, or cultural resources are present within the Corridor or crossed by the Route; therefore, the Project is not anticipated to impact these resources. For further discussion, please see Sections 13.0, 14.0, 17.0, and 18.0 of this Consolidated Application.

18.10 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 Project location is such that the likelihood of migratory birds being impacted by the Project is extremely low. No 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 13.0, 14.0, 17.0, and 18.0 of this Consolidated Application.

18.11 Problems Raised by Federal Agencies, other State Agencies, and Local Entities

A summary of consultations, notifications, and agency responses is provided in Section 15.0; copies of correspondence are provided in Appendix E. Consultation is ongoing and NuStar will respond to and address concerns if raised.

19 OTHER FACTORS CONSIDERED

19.1 Design Construction Limitations

Specific factors considered in the selection of the Corridor and Route, including design and construction limitations, are identified in Sections 3.0 and 13.0 and discussed throughout this Consolidated Application. In particular, road crossings and wetland crossings will require HDD installation, which has been incorporated into the proposed Project design (see Section 11.2).

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 195.

19.2 Economic Considerations

In selecting the Corridor and Route, one of many factors NuStar considered was facilitating construction of the Project in the most economical and efficient manner. However, Corridor and Route selection required balancing of a number of factors, as discussed specifically in Sections 3.2 and 13.0 of this Consolidated Application.

Other economic considerations associated with the Project include the positive direct and indirect economic benefits that the Project will provide. As discussed in Sections 17.4.2 and 18.7 of this Consolidated Application, the Project will provide short-term employment of workers during construction and increased revenues from local expenditures.

19.3 Present and Future Natural Resource Development

As discussed in Section 17.1.1, there are no national parks, national memorial parks, national historic sites or landmarks, national wilderness areas, or national monuments located within the Corridor and 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 17.2.1, there are no wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; or grasslands within the Corridor or 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 land used for agricultural crop production. Once construction is complete, the ROW will be restored to its prior use. Further, as discussed in Sections 17.3.7 and 17.4.7, NuStar 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.

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

NuStar 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, NuStar has developed an EMP, presented as Appendix B, which outlines 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. Specifically, the

EMP provides a detailed description of the mitigation measures that will be implemented during Project construction, including the following.

- General mitigation measures
- Spill prevention
- Temporary erosion and sediment control
- Highway and road crossings
- Uplands
- Wetland crossings
- Hydrostatic testing

NuStar is also developing specific plans for the Project, including a Stormwater Pollution Prevention Plan and a Frac-Out Contingency Plan.

21 QUALIFICATIONS OF PREPARERS

Mr. Jim Dawson

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Mr. Dawson is a senior environmental specialist/project manager who provides regulatory compliance consulting services for oil and gas operations, including environmental site assessments and due diligence activities; stormwater permitting and inspections; preparation of Spill Prevention, Contingency and Countermeasure Plans, Facility Response Plans, and Pipeline Spill Response Plans; spill investigation, assessment, and cleanup services; and investigation and cleanup/remediation of reserve pits and legacy contamination sites.

Mr. Dawson is a Professional Geologist and Certified Hazardous Materials Manager with extensive field, regulatory, managerial, and consulting experience throughout the United States with diverse project experience, including contaminated soil and groundwater investigation, monitoring, and remediation; environmental site assessments and due diligence activities; solid and hazardous waste management; environmental regulatory permitting and compliance assistance; groundwater resources studies; and unexploded ordnance detection, discrimination, and remediation technologies.

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Ms. Smith assists clients with pipeline, wind farm, solar, and transmission line permitting matters in North Dakota, South Dakota, and Minnesota. Her experience includes representing clients in state and local administrative proceedings, including certificate of corridor compatibility, route permit, and certificate of site compatibility proceedings before the North Dakota Public Service Commission; facility permit proceedings before the South Dakota Public Utilities Commission; and certificate of need, Route permit and site permit proceedings before the Minnesota Public Utilities Commission. Ms. Smith has a

B.A. in English from Northern State University, Aberdeen, SD; a M.A. in Literature from Colorado State University, Fort Collins, CO; and a J.D. from the University of Minnesota Law School, Minneapolis, MN.

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Mr. Smith is a project manager who provides management over all phases of company projects including design, development and construction for pipeline systems and relocations, pump station and storage tank terminal facilities, truck loading and unloading facilities. Experience has been on crude oil pipelines, refined petroleum pipelines, as well as anhydrous ammonia pipelines. Mr. Smith attended Wichita State University and has over 40-years of pipeline industry experience ranging from drafting & design, project and construction development and management.

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