

NST EXPRESS, LLC

CERTIFICATE OF CORRIDOR COMPATIBILITY
AND ROUTE PERMIT APPLICATION

2016

A large orange geometric graphic consisting of a triangle and a rectangle. The triangle is on the right side, with its hypotenuse on the left. A horizontal line extends from the left edge of the page across the triangle. A white diagonal line runs from the bottom-left corner of the triangle towards the top-right corner.

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

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- C. Environmental Mitigation Plan and Engineering Drawings
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- E. Cultural Resources Report (**NON-PUBLIC**)
- F. Ecological Assessment Report

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ACRONYMS AND ABBREVIATIONS

ARO	Abrasive Resistant Overlay
BMPs	Best Management Practices
BNSF	Burlington Northern Santa Fe
bpd	barrels per day
Commission	North Dakota Public Service Commission
Consolidated Application	Consolidated Certificate of Corridor Compatibility and Route Permit Application
Corridor	Proposed Project Corridor
dB	decibel
dba	A-weighted scale
E	Endangered
EIA	U.S. Energy Information Administration
EMP	Environmental Mitigation Plan
GIS	geographical information systems
GPS	Global Positioning System
HDD	horizontal directional drilling
ICBM	Intercontinental ballistic missile
IMP	integrity management plan
ND DOT	North Dakota Department of Transportation
NDAC	North Dakota Administrative Code
NDCC	North Dakota Century Code
NDDH	North Dakota Department of Health
NDGFD	North Dakota Game and Fish Department
NDSWC	North Dakota State Water Commission
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NST Express	NST Express, LLC
NST Express Alexander Facility	NST Express market hub facility located northwest of Alexander, North Dakota
NST Transload East Fairview Facility	NST Transload East Fairview rail loading facility
NWI	National Wetlands Inventory
PHMSA	Pipeline Hazardous Materials Safety Administration

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Project	NST Express WTT Pipeline Project
Route	Proposed Project Route
ROW	right-of-way
SCADA	Supervisory Control and Data Acquisition
SHSND	State Historical Society of North Dakota
SPCC Plan	spill prevention, control, and countermeasures plan
Study Area	1-mile-wide corridor (0.5 mile on either side of the proposed centerline) from the Tesoro Break-Out Tank site, to the site of the Project's interconnection with the NST Express Alexander Facility
Survey Area	A survey corridor that includes the Tesoro Break-Out-Tank Site and an area ranging from approximately 200 to 400 feet wide covering the construction right of way (ROW), including the portions within the NST Express Alexander Facility, totaling 144 acres
SWPPP	Stormwater Pollution Prevention Plan
T	Threatened
TEC	threatened, endangered, or candidate
Tesoro	Tesoro Logistics GP, LLC
Tesoro Break-Out Tank	Existing crude oil, break-out tank located north of Alexander, North Dakota
UDP	Unanticipated Discoveries Plan
US DOD	U.S. Department of Defense
USACE	U.S. Army Corp of Engineers
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
WAWSA	Western Area Water Supply Authority

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**CHECKLIST FOR COMBINED CORRIDOR COMPATIBILITY
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Authority	Description	Section(s)
<i>Chapter 49-22</i> CENTURY CODE – Title 49		
49-22-08	Application for a Certificate for a Corridor (CC)	
1.a.	Description of size and type of facility	1.0, 9.0
1.b.	Summary of any studies of environmental impacts	14.0
1.c.	Need for the facility	3.0
1.d.	Site for energy conversion facility	N/A
1.e.	Preferred transmission (pipeline) corridor	2.2
1.f.	Analysis of merits and detriments of facility location	2.2, 13.0
1.g.	Mitigating measures	20.0
1.h.	Corridor evaluation pursuant to 49-22-09 and 49-22-05.1	16.1, 16.2, 18.0
49-22-08.1	Application for Route Permit (RP)	
1.a.	Description of size and type of facility	1.0, 9.0
1.b.	Description of the location	2.0
1.c.	Route evaluation relative to 49-22-09 and 49-22-05.1	16.1, 16.2, 18.0
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-acquisition; and 2) how landowners will be compensated	10.0
1.g.	Other relevant information	19.0
49-22-09	Factors to be considered in evaluating corridor and route applications	18.0

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Authority	Description	Section(s)
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	1.0
2.a.(2)	Purpose of facility	3.0
2.a.(3)	Technology to be deployed	5.0
2.a.(4)	Type of product to be transmitted	4.1
2.a.(5)	Source of product being transmitted	4.2

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Authority	Description	Section(s)
2.a.(6)	Final destination of product being transmitted	4.3
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 associate facilities	9.2.1
2.a.(7)(g)	The estimated distance between pipeline surface structures	9.2.2
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2.b.(2)	Obtaining route permit	7.2
2.b.(3)	Completing right-of-way acquisition	7.3
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Authority	Description	Section(s)
2.b.(7)	Commencing operations	7.7
2.c.	A copy of each evaluative study or assessment of environmental impact of the proposed facility submitted to the agencies listed in section 69-06-01-05 and each response received	Appendix E and F
2.d.	Need for facility	3.0
2.e.	Description of alternatives	13.0
2.f	Corridor width	2.2, 9.1.1
2.g.	Study area to enable the Commission to evaluate the factors in the Century Code section 49-22-09	2.1, 14.0, 18.0
2.h.	Discussion of factors in Century Code 49-22-09 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 lead to route location	Appendix A
2.k.	Discuss relative value of each criteria and how the location was selected; how operation will affect criteria	2.0, 14.0, 16.0, 18.0
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	
2.p.	Discussion of present and future natural resource development in the area	19.3
2.q.	Maps and GIS data meeting PSC requirements	Appendix A and GIS CD

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Authority	Description	Section(s)
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	16.1
1.a.	Designated or registered national: parks, sites, landmarks, monuments, wilderness	16.1.1
1.b.	Designated or registered state: parks, sites, monuments, archeological sites, natural preserves	16.1.2
1.c.	County parks and recreational areas, municipal parks, parks owned or administered by other governmental subdivisions	16.1.3
1.d.	Areas of critical habitat	16.1.4
1.e.	Areas where unique or rare species would be irreversibly damaged	16.1.5
1.f.	Area within 1,200 feet of an intercontinental ballistic missile (ICBM) facility	16.1.6
1.g.	Areas within 30 feet of direct line of ICBM launch facilities	16.1.7
2	Avoidance Areas	16.2
2.a	Designated or registered national: historic districts, wildlife areas, wild, scenic or recreational rivers, wildlife refuges, grasslands	16.2.1
2.b.	Designated or registered state: wild, scenic, recreational rivers, game refuges, game management areas, forest management lands, grasslands	16.2.2
2.c	Historical resources which are not specifically designated as exclusion or avoidance areas	16.2.3
2.d.	Areas which are geologically unstable	16.2.4
2.e.	Within 500 feet of a residence, school, or place of business	16.2.5

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Authority	Description	Section(s)
2.f.	Reservoirs and municipal water supplies	16.2.6
2.g.	Water sources for organized rural water districts	16.2.7
2.h.	Irrigated land (does not apply to underground transmission facility)	N/A
2.i.	Area of recreational significance but not designated exclusion areas	16.2.8
3	Selection criteria.	16.3
3.a.(1)	Agricultural production	16.3.1
3.a.(2)	Family farms and ranches	16.3.2
3.a.(3)	Land economically suitable for irrigation	16.3.3
3.a.(4)	Surface drainage patterns and groundwater flow patterns	16.3.4
3.b.(1)	Sound sensitive land uses	16.3.5
3.b.(2)	Visual effect on adjacent area	16.3.6
3.b.(3)	Extractive and storage resources	16.3.7
3.b.(4)	Wetlands, woodlands, and wooded areas	16.3.8
3.b.(5)	Radio and TV reception and other communication or electronic facilities	16.3.9
3.b.(6)	Human health and safety	16.3.10
3.b.(7)	Animal health and safety	16.3.11
3.b.(8)	Plant life	16.3.12
4	Policy criteria	16.4
4.a.	Location and design	16.4.1
4.b.	Training and utilization of instate labor	16.4.2
4.c.	Economies of construction and operation	16.4.3

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Authority	Description	Section(s)
4.d.	Use of citizen coordinating committees	16.4.4
4.e.	Commitment of portion of transmitted product for use in state	16.4.5
4.f.	Labor relations	16.4.6
4.g.	Coordination of facilities	16.4.7
4.h.	Monitoring of impacts	16.4.8
4.i	Using existing or proposed rights-of-ways and corridors	16.4.9
4.j.	Using existing or proposed transmission facilities	16.4.10

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INTRODUCTION

NST Express, LLC (NST Express) proposes to construct an approximately 3.6-mile-long crude oil pipeline and associated facilities in McKenzie County, North Dakota. The pipeline will originate at Tesoro Logistics GP, LLC's (Tesoro) existing crude oil, break-out tank located north of Alexander, North Dakota (Tesoro Break-Out Tank), and terminate at the NST Express market hub facility located northwest of Alexander, North Dakota (NST Express Alexander Facility), which is permitted and currently under construction. The proposed pipeline and associated facilities are referred to as the NST Express WTT Pipeline Project (Project). The Project is located entirely in McKenzie County, North Dakota (Figure 1).

NST Express is submitting a 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 proposed Project. In addition, NST Express is also submitting the enclosed Application for a Waiver or Reduction of Procedures and Time Schedules.

The Project will allow crude oil producers in North Dakota's Bakken production region to safely and efficiently transport crude oil to the NST Express Alexander Facility. From there, the crude oil can be transported via the NST Express Pipeline to the existing NST Transload East Fairview rail loading facility (NST Transload East Fairview Facility), or via third-party interconnecting pipelines. Both options will provide producers with access to major U.S. markets.

This Consolidated Application supports NST Express' request for a Certificate of Corridor Compatibility and Route Permit and complies with Chapter 49-22 of the North Dakota Century Code (NDCC) and Chapters 69-06-05 and 69-06-08 of the North Dakota Administrative Code (NDAC).

1.0 FACILITY TYPE

The proposed Project is comprised of an underground pipeline and associated facilities for the transport of crude oil. The underground, 8-inch pipeline will be approximately 3.6 miles long and will commence at the Tesoro Break-Out Tank site, located approximately 6 miles north of Alexander, North Dakota. At its terminus, the Project will interconnect to the NST Express Alexander Facility, located approximately 9 miles northwest of Alexander, North Dakota, via one of the facility's six pipeline interconnections.

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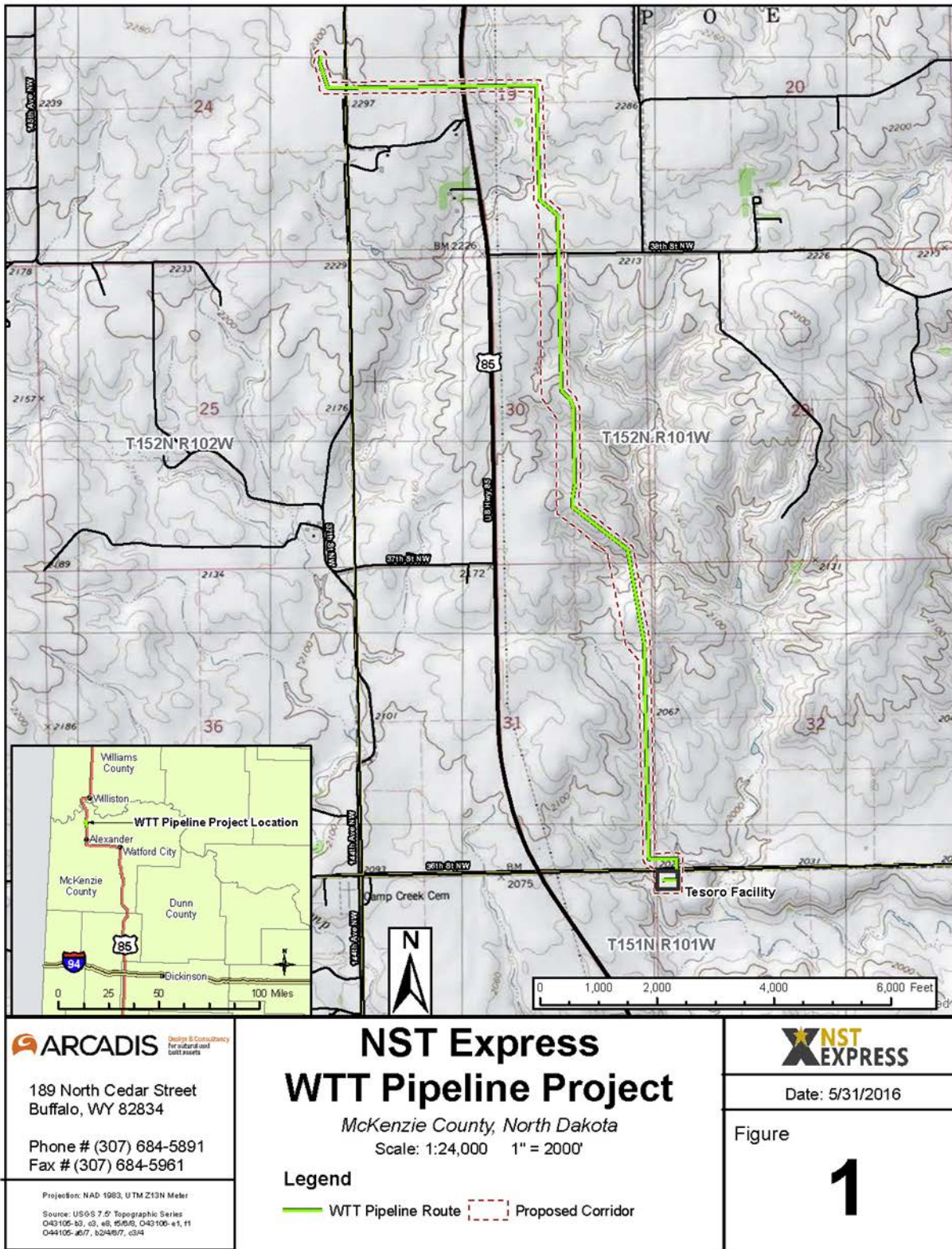


Figure 1. Overview of NST Express Project Route

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At the Tesoro Break-Out Tank site, the Project interconnection facilities to be constructed will include a valve, a strainer, a booster pump, a modular meter pump, a meter, and a pig launcher. In addition, 16-inch diameter pipe will be installed between the Tesoro Break-Out Tank and the booster pump. Equipment and panels for Programmable Logic Controller/Open Multi-Network Integration Control Equipment and Supervisory Control and Data Acquisition (SCADA) communications will also be installed.

At the NST Express Alexander Facility site, a pig receiver, a meter, and piping to reach the interconnection point will be installed. In addition, equipment and panels for Programmable Logic Controller/Open Multi-Network Integration Control Equipment and SCADA communications will be installed.

The Project will provide a maximum flow rate of 40,000 barrels per day (bpd). The Project will be constructed with unilateral flow from the Tesoro Break-Out Tank to the NST Express Alexander Facility.

2.0 LOCATION

2.1 Project Study Area and Survey Area

NST Express defined the Project's study area as a 1-mile-wide corridor (0.5 mile on either side of the proposed centerline) from the Tesoro Break-Out Tank site, to the point of the Project's interconnection with the NST Express Alexander Facility (Study Area).

NST Express used a survey corridor that includes the Tesoro Break-Out-Tank Site and an area ranging from approximately 200 to 400 feet wide covering the construction right of way (ROW), including the portions within the NST Express Alexander Facility, totaling 144 acres (Survey Area).

2.2 Preferred Location of Project Corridor and Route

NST Express is seeking approval of a Project corridor (Corridor) that aligns with the Survey Area used for conducting environmental field surveys for the Project, as described in Section 2.1 above. The proposed Corridor, and the location of the proposed Project route (Route) within the Corridor, are depicted on the aerial maps in Appendix A.

NST Express dedicated a significant amount of work to selecting its Corridor and the Route. NST Express obtained and analyzed public and proprietary information to identify sensitive areas and features within the Study Area, such as exclusion and avoidance areas, populated areas, wetlands, waterbodies, natural resources, areas of cultural significance, and public lands. Furthermore, NST Express considered existing ROWs (e.g., pipelines, roads, and power lines) in an effort to maximize co-location with other utilities.

Once an initial corridor and route were selected, NST Express sought input from affected landowners, agencies, local governments, and owners of existing infrastructure regarding the proposed corridor and route, and further refined the corridor and route based on input received.

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In addition, NST Express completed civil and environmental field surveys and additional constructability reviews to further refine its route. Ultimately, the result is the Corridor and Route, which meet the needs of the Project, 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 Section 13.0 of this Consolidated Application.

3.0 PURPOSE AND NEED OF THE FACILITY

The purpose of the Project is to transport crude oil from the existing Tesoro Break-Out Tank to the NST Express Alexander Facility. From there, the crude oil can be transported via the NST Express Pipeline to the NST Transload East Fairview Facility near East Fairview, North Dakota, or via third-party interconnecting pipelines. The NST Transload East Fairview Facility transports crude oil via the Burlington Northern Santa Fe (BNSF) Railway to the west, east, and potentially Gulf Coast markets.

The Project will provide an additional outlet for crude oil from the Tesoro system, thereby removing an existing capacity constraint and enabling additional crude oil barrels to enter the system. As a result, crude oil that would otherwise be transported by truck to a market hub can enter the Tesoro system and be transported by pipeline. As such, the Project will provide a safer and more efficient means of transporting crude oil.

The Project will also directly benefit Bakken crude oil producers by allowing for the efficient aggregation of volumes of crude oil from within McKenzie County and adjacent counties for shipment to major U.S. markets, thereby offering producers the potential for better netbacks. In addition, the Project will offer producers greater options for markets and pricing.

The Project will provide direct benefits to local communities through temporary construction employment, jobs to operate and maintain the pipeline and associated facilities, easement compensation, and additional tax revenues via property taxes and sales taxes from the sale of goods and services during both Project construction and operation. Additional indirect benefits will result from Project-related purchases of local goods and services, such as the purchase of local gravel for access roads, purchase of fuel, and restaurant and hotel expenditures by Project construction and operations personnel.

4.0 PRODUCT

4.1 Type of Product to be Transmitted

The Project will transmit Light Sweet Crude Oil.

4.2 Source of Product

The anticipated sources of the crude oil to be transported by the Project are formations in the Williston Basin region.

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4.3 Final Destination of Product

The final destination of the crude oil transported by the Project will be refining markets throughout the United States, which will be accessed through the NST Express Alexander Facility and its connections to the NST Transload East Fairview Facility, via the NST Express Pipeline, and third-party interconnecting pipelines.

5.0 TECHNOLOGY TO BE DEPLOYED

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

- Use of an external protective coating, including Abrasive Resistant Overlay (ARO) coating on pipe installed via horizontal directional drilling (HDD), and cathodic protection to prevent external pipeline abrasion and/or corrosion.
- Regular internal pipeline inspection 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 SCADA monitoring and alarm system that continuously monitors the flow and pressure of the system and triggers alarms for anything outside normal operating conditions.

Construction and installation of the pipeline will use different techniques to avoid or minimize impacts to sensitive areas and identified road crossings, such as HDD. These techniques are discussed further in Section 11.0 below.

6.0 ESTIMATED TOTAL COST FOR CONSTRUCTION

The estimated total cost for construction is \$6.8 million.

7.0 SCHEDULE

7.1 Obtaining Certificate of Corridor Compatibility

NST Express requests a Certificate of Corridor Compatibility and Route Permit from the Commission in September 2016.

7.2 Obtaining Route Permit

NST Express requests a Certificate of Corridor Compatibility and Route Permit from the Commission in September 2016.

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7.3 Completing Right-of-Way Acquisition

NST Express expects to complete ROW acquisition by December 2016.

7.4 Starting Construction

Construction for the Project is scheduled to begin in the fall of 2016.

7.5 Completing Construction

NST Express expects to complete construction of the Project by October 2017.

7.6 Testing Operations

NST Express expects to conduct testing of the pipeline and associated site facilities during the Fourth Quarter of 2017.

7.7 Commencing Operations

The Project is anticipated to be operational no later than December 31, 2017.

8.0 TEN YEAR PLAN

NST Express filed its Ten Year Plan for 2016 through 2026 with the Commission on June 7, 2016. The proposed Project is consistent with NST Express' Ten Year Plan (Appendix B).

9.0 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 pipeline will be installed using a 70-foot-wide construction ROW, consisting of a 30-foot-wide permanent easement and an adjacent 40-foot-wide temporary workspace. Refer to Appendix C for a schematic of the proposed Project ROW. The construction ROW will expand to up to 150 feet wide in some areas, such as at road crossings. The Project will also require access driveways/roads for operations and maintenance.

9.1.2 Length of Facility

The pipeline route is approximately 3.6 miles long, originating at the Tesoro Break-Out Tank site and terminating at the NST Express Alexander Facility.

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9.1.3 Pipe Size

The Project will require installation of an 8.625-inch outside diameter carbon steel mainline pipeline with a nominal wall thickness of 0.250 inch. The nominal wall thickness will increase to 0.322 inch for HDD installation locations. The pipe material will be API-5L CS X52.

Between the Tesoro Break-Out Tank and the booster pump to be installed as part of the Project on the Tesoro site, 16-inch outside diameter carbon steel pipe will be installed, with a nominal wall thickness of 0.375 inch. The 16-inch pipe material will be API-5X CS X52.

9.1.4 Maximum Design Operating Pressure and Temperature

The maximum operating pressure for the pipeline is 1,440 pounds per square inch gauge throughout the Project. The pipeline will be designed to operate at a maximum of 100 degrees Fahrenheit.

9.2 Aboveground Facilities

9.2.1 General Location of New Associated Facilities

Above-ground associated facilities for the Project will be installed at two locations: (1) within the Tesoro Break-Out Tank site, located approximately 6 miles north of Alexander, North Dakota, in Section 5, Township 151 North, Range 101 West, McKenzie County, North Dakota; and (2) within the NST Express Alexander Facility site, located approximately 9 miles northwest of Alexander, North Dakota, in Section 24, Township 152 North, Range 102 West, McKenzie County, North Dakota. See Appendix A for site plans showing the facilities to be installed within each site.

Above-ground associated facilities installed on the Tesoro Break-Out Tank site include a valve, a strainer, a booster pump, a modular meter pump, a meter, and a pig launcher, as well as equipment and panels for Programmable Logic Controller/Open Multi-Network Integration Control Equipment and SCADA communications.

Above-ground associated facilities installed at the NST Express Alexander Facility site include a pig receiver and a meter, as well as equipment and panels for Programmable Logic Controller/Open Multi-Network Integration Control Equipment and SCADA communications.

9.2.2 Estimated Distance between Surface Structures

The Project's above-ground facilities will be located at each end of the Project. The estimated distance between surface structures is 3.6 miles.

Pipeline markers will also be placed at designated locations along the route (e.g., public road crossings).

9.2.3 Maximum Design Flow Rate for Pipeline Facilities

The maximum design flow rate for the Project is 40,000 bpd.

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9.2.4 Number and Location for Compressor and/or Pumping Stations

One pumping station will be located on the Tesoro Break-Out Tank site. The pumping station will consist of one modular meter pump and a booster pump.

10.0 EASEMENT ACQUISITION

10.1 Informing Landowners of Easement Acquisition

Upon identifying the preliminary route, NST Express used publically available information to identify landowners along the proposed route. NST Express then contacted landowners via telephone and/or in-person. NST Express land agents presented proposed route maps for landowner review and NST Express took into consideration landowner input in developing the Route. NST Express has obtained all necessary survey permissions, and will commence negotiations with landowners for acquisition of option agreements to obtain ROW easements in the near future.

NST Express has acquired the Alexander Facility site in fee, and will enter into an agreement with Tesoro to use the portion of the Tesoro Break-Out Tank site on which Project facilities will be located.

10.2 Compensation for Easement

Landowners will be compensated for Project-required interests at or above their fair market values. Compensatory offers for easements and fee acquisitions will be based on analysis of comparable property values. All offers will be presented to landowners in writing with appropriate legal descriptions and depictions identifying the parameters and location of the permanent pipeline ROW easement and temporary construction easements. NST Express' land agents are trained and tasked to negotiate respectfully and in good faith with all landowners and governing entities. NST Express stresses to its land agents its preference for all negotiations, when possible, to be conducted with each landowner in person and as often as necessary to reach a mutually beneficial agreement.

NST Express will compensate landowners for permanent easement rights and temporary workspace use. NST Express uses a formula for compensation relating to incidental damages incurred as a result of its pipeline construction activity, such as crop losses. Anticipated damages, such as crop loss, will be calculated and included in the original compensation amount. If additional damage claims are made at a later date, NST Express will address the claims as they arise.

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

11.1 Description of Right-of-Way Preparation and Construction

The proposed Project will be designed, constructed, tested, operated, and maintained in accordance with applicable requirements under the USDOT regulations in Title 49 CFR Part 195, U.S. Department of Labor regulations, OSHA 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 mobilization, a pre-construction safety and environmental orientation will be held on-site. 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. The construction contractor will provide at least one qualified and experienced safety representative, as well as personnel trained in emergency management.

Construction will only take place during daylight hours. Spill prevention measures will be in place to maintain construction personnel safety and to protect the environment. To maintain public and construction personnel safety, access to the ROW will be controlled to allow only authorized vehicles to the extent practicable.

The standard pipeline construction process includes clearing and grading, trenching, pipe stringing, bending, welding, lowering the pipeline, padding and backfilling, hydrostatic testing, and ROW cleanup and restoration (see Pipeline Construction Sequence schematic in Appendix C). 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 ROW and temporary workspaces), pipeline centerline, access roads, aboveground facilities, and sensitive areas, such as wetland boundaries and cultural sites, have been staked and flagged, the construction area would be cleared and graded. Prior to removal, trees and shrubs will be inventoried in accordance with the Commission's Tree and Shrub Mitigation Specifications. 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 would be removed and segregated from the underlying subsoil. Topsoil would be removed from both the trench and spoil side for the entire length of the pipeline and stored on the temporary construction ROW on the spoil side of the trench. Construction activities would be suspended, or adequate protection measures taken, during abnormally wet conditions to prevent excessive rutting or mixing of topsoil with subsurface

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soils. Refer to the Pipeline Construction Sequence and Topsoil Salvage Trench and Spoil Side schematic in Appendix C for additional detail.

Measures will be taken during the clearing and grading operations to maintain continuous access to pastures, grazing units, and livestock facilities. Best Management Practices (BMPs) such as silt fences would be installed along the ROW adjacent to wetlands. Temporary erosion controls would be installed after initial disturbance of soils, where necessary, to minimize erosion. Erosion control BMPs would be maintained throughout construction. Erosion control measures are discussed further in the Environmental Mitigation Plan (EMP) provided in Appendix C.

11.1.2 Trenching

Trenches would be excavated using a trencher or backhoe to a depth sufficient to provide the minimum cover required by federal, state, and local governments, as well as landowner requirements. If areas of solid rock are encountered, special excavation equipment and/or techniques would be used.

The amount of open trench permitted at any time during the Project would be dependent on the stability of the trench and weather conditions. In areas where livestock is confined or in cultivated fields, temporary “plugs” would be installed at regular intervals along the ROW to provide safe access for livestock and farm equipment across the open trench.

11.1.3 Pipe Stringing, Bending, and Welding

Pipe would either be stored at storage yards or transported directly to the pipeline ROW. Following trenching, pipe would be strung along the ROW. A stringing crew using special trailers would move the pipe along the ROW. Pipe lengths will typically be 40 to 60 feet long.

A pipe-bending machine would 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 would be in accordance with federal standards to ensure integrity of the bend. Pipe used for sharp bends are bent at the mill. The pipe would be pre-coated with a fusion-bonded epoxy external coating to provide corrosion protection. An ARO coating would also be used on pipe installed via HDD.

The welding process joins the sections of pipe into one continuous length. All welders would be required to pass an approved qualification test; the test would use Project-specific weld procedures developed in accordance with federally adopted welding standards. All field welds would be nondestructively tested to ensure structural integrity and compliance with USDOT regulations. Once welds are approved, the joints would be externally coated and the entire pipeline would be visually and electronically inspected for coating defects, scratches or other damage. Any damage or defects would be repaired before lowering the pipe into the trench.

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11.1.4 Pipeline Installation and Trench Backfilling

Several side-boom tractors would simultaneously lift the welded sections of pipe and lower them into the trench. Non-metallic slings would be used to protect the pipe and coating as it is raised and lowered into position. Sand bags or foam blocks would 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 or water stops would be installed adjacent to wetlands and in steep topography to eliminate water migration along the trench. When required, the trench would be dewatered prior to lowering in the pipe. Dewatering effluent would pass through sediment filters, such as hay bale structures and/or filter base, to ensure compliance with applicable water quality requirements.

Once the pipe is installed, the trench would be backfilled. Soil would be returned to the trench in the reverse order of excavation. Subsoil would be returned to the trench first, followed by the topsoil. The trench line would be compacted with a wheeled-roller or other suitable construction equipment. A crown would be left over the trench line to allow for natural subsidence. If the excavated material contains rocks that could damage the pipe and/or coating, a rock shield would be used to protect the pipe. Topsoil would not be used for padding.

11.2 Special Construction Techniques

11.2.1 HDD Construction

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. NST Express proposes to use the HDD method at crossing locations where conventional installation techniques are not possible or to avoid particular existing features, such as paved roadways and some wetlands.

The first phase of HDD consists of 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 a desired target depth.

The second phase consists of enlarging the pilot hole to a size that would accommodate pulling the pipeline through the enlarged hole, approximately 1.5 to 2.0 times the outer diameter of the pipe. The enlargement of the pilot hole, or reaming, would be accomplished by pulling reaming heads of specific diameters through the hole, in stages if necessary, to create a wider 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. While the hole is being drilled, the pipe is being welded to accommodate the length of the HDD. Once welding is complete, the entire segment of pipe is pressure tested prior to installation.

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Once the drilled hole is prepared and stable, the welded section of pipeline is pulled through the hole. Generally, the pipe is laid out and welded on the exit side of the drill. The welded section can be assembled in segments instead of a continuous length; however, pipe pulling operations would cease while the segments are being welded together. Refer to the Typical HDD Crossing schematic in Appendix C.

11.2.2 Highway and Road Crossings

Highway and road crossings would be constructed according to applicable crossing permits. When crossing primary roads, paved roads, and highways with large volumes of traffic that have a well-defined traffic lane with shoulders, the Project plans to use the HDD method. Little or no traffic disruption is expected when using the HDD method. Unimproved roads, generally minor roads with minimal traffic and natural earth material surfaces, would be crossed using the open cut method. The open cut method may require temporary road closures, reducing traffic to one lane, and traffic detours. Temporary closures and/or detours would be conducted in accordance with applicable permits and in coordination with local road authorities and landowners. Refer to the Road Crossing schematic in Appendix C.

11.2.3 Wetland Crossings

Where the Project crosses wetlands, NST Express proposes to either use HDD or open cut construction techniques. With respect to open cut installation, NST Express will utilize standard construction measures to avoid or minimize any potential impacts. The following is a general list of measures to be used, as needed:

- Use wooden matting to protect the area from disturbance, in lieu of removing topsoil from the entire ROW.
- Employ double ditching or segregation of ditch spoils, to the extent possible, to return native fill in same layering in which it was disturbed.
- In cases of potential drainage, trench plugs would be installed.
- Deploy hay, silt fence, or a combination of the two to prevent erosion.
- Remove mitigation measures when construction in the area is completed (i.e., all matting removed, hay/silt fencing removed when ground is stabilized).
- Reseed with native grasses and/or vegetation.
- No fertilizer or lime will be used.
- Mitigation measures associated with wetland crossings are also discussed in the EMP in Appendix C.

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11.3 Restoration Procedures

Once construction is complete, the pipeline ROW and temporary workspace will be restored to its 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. Wetland edges will be stabilized and permanent erosion control measures will be installed. Disturbed areas will be revegetated using seeding requirements specified by the Natural Resources Conservation Service (NRCS) or as required by the landowner. Specific restoration measures are described in the EMP, which is provided in Appendix C.

12.0 OPERATION AND MAINTENANCE

During Project operation, pipeline pressure, temperature, and flow rate data would be transmitted via satellite to a central SCADA system located at the NST Express Alexander Facility. The SCADA system would provide continuous monitoring of measurement 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 would be triggered, notifying the operator of the potential issue. Both the NST Express Pipeline Project and this Project will be covered by the same pipeline integrity management plan (IMP) that complies with applicable federal regulations and outlines preventive maintenance, inspection, line patrol, leak detection systems, SCADA, and other pipeline integrity procedures to be implemented to ensure the safe operation of the Projects. The IMP is currently under development.

In the event of an emergency, NST Express would implement emergency response measures to address the situation. NST Express will contract with an experienced emergency response service provider for the Project. In addition, consistent with federal regulations, NST Express is preparing a spill prevention, control, and countermeasures plan (SPCC Plan) for both the NST Express Pipeline Project and this Project, which will outline specific protocols to be implemented in the event of an emergency.

During operations, NST Express would use the permanent ROW to conduct inspections and perform maintenance activities. Maintenance activities would 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.

13.0 ALTERNATIVES CONSIDERED

13.1 Project Alternatives

13.1.1 No Action

Under No Action, the proposed Project would not be constructed. Without the Project, a pipeline connection between Tesoro's Break-Out Tank and the NST Express Alexander Facility, with its

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connections to the NST Transload East Fairview Facility (via the NST Express Pipeline) and third-party pipelines, would not be established. As a result, crude oil at the Tesoro Break-Out Tank would not be transported to the NST Express Alexander Facility for further transport to markets throughout the United States. As such, the purpose and need of the Project, which is to provide Bakken producers with a safe, efficient means to reach the NST Express Alexander Facility and, from there, to have greater optionality and pricing efficiencies, would not be fulfilled. For these reasons, No Action is not an alternative to the Project.

13.1.2 Other Pipelines

No existing or planned pipeline projects provide a pipeline connection extending between the Tesoro Break-Out Tank and the NST Express Alexander Facility. As such, no other pipelines meet the purpose and need of this Project.

13.1.3 Rail

No rail facilities exist or are planned that would provide a means to transport crude oil between the existing Tesoro Break-Out Tank and the NST Express Alexander Facility. Given the lack of existing rail infrastructure between the proposed endpoints, construction of permanent, aboveground rail lateral service lines and ancillary facilities would be required. Such facilities would require permanent conversion of agricultural land to an industrial purpose. Thus, rail facilities would have greater permanent environmental and landowner impacts than the Project. For this reason, while the Project may help facilitate crude oil transportation to an existing rail loading facility, rail, itself, is not an alternative to the Project.

13.1.4 Trucking

Crude oil could be transported to the NST Express Alexander Facility by commercial truck. However, trucking crude oil would result in increased traffic on roads, with associated impacts on public safety and infrastructure. For example, between 2004 and 2013, crashes involving trucks increased by approximately 200 percent in North Dakota (North Dakota State University 2014). Crashes involving trucks are 30 percent more likely to result in injury than non-truck-related crashes (North Dakota State University 2015).

The normal daily throughput of the proposed Project would be approximately 40,000 barrels of crude oil. The average load for a truck carrying crude oil is approximately 178 barrels (approximately 7,500 gallons) per truck. Thus, it would require approximately 225 trucks per day, an average of 9.4 trucks every hour for 24 hours a day, to transport the volume of product the pipeline would transport.

In addition, transporting crude oil by truck is less reliable than transporting by pipeline due to limited road capacities, seasonal constraints (e.g., snow, overweight road restrictions), increased maintenance issues, and the limited availability of trucks and drivers. Also, since a truck on-loading facility does not currently exist at the Tesoro Break-Out Tank, such a facility would have to be constructed in order to facilitate truck hauling between the Tesoro Break-Out Tank and the NST Express Alexander Facility, which would have associated environmental impacts.

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For these reasons, trucking is not an alternative to the Project.

13.1.5 Route Alternatives

The overall objective of the Project is to safely and reliably transport crude oil from the Tesoro Break-Out Tank to the NST Express Alexander Facility for transport by pipeline and/or rail to market. Factors considered in selecting the Route include the following.

- Meeting the Project's geographic requirements (extending from the existing Tesoro Break-Out Tank to the NST Express Alexander Facility).
- Complying with the Commission's 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.
- Ensuring constructability and utilizing operational efficiencies.
- Minimizing safety concerns.
- Ensuring the ability to acquire ROW from landowners.

During route development, NST Express started with an initial route that extended north from the Tesoro Break-Out Tank site on the east side of an existing natural gas pipeline. The route then continued north along an existing electric line, and then again paralleled the natural gas pipeline just before turning west to enter the eastern portion of the NST Express Alexander Facility site. In certain areas, the route was located between the existing pipeline and electric line rights-of-way, and the construction workspace in those areas was very limited.

As a result, NST Express shifted the route to the west side of the existing pipeline near the Tesoro Break-Out Tank site. This shift enabled the route to continue to parallel existing infrastructure (approximately 2.8 miles of the current Route parallels the electric line and/or pipeline rights-of-way), while ensuring sufficient construction workspace. The shift also reduced the number of crossings of the existing pipeline and electric line.

Two additional adjustments were made to the route initially considered. First, to align the route with the planned interconnection point at the NST Express Alexander Facility, NST Express moved the point at which the route turned toward the west to the south of the facility site, thereby allowing the route to enter the facility site from the south (where the interconnect point will be located), rather than the east. Second, NST Express shifted a short segment of the route further to the southwest to avoid two cultural resource sites identified during field surveys.

The finalized Route meets the needs of the Project, while complying with the Commission's siting criteria, minimizing impacts to landowners and the environment, and maximizing co-location with existing infrastructure.

14.0 ENVIRONMENTAL STUDIES

14.1 Cultural Resource Inventory

As part of the initial phase of this investigation, a Class I background search of archaeological and historical literature and records for the Study Area was conducted on April 7, 2016. Results of the background search identified 13 previously recorded cultural resources and 1 isolated find located in the Study Area. Of the 13 sites, only four were located within the Corridor.

A Class III cultural resource inventory was conducted within the Corridor on April 28 and 29, 2016. During the survey, Arcadis revisited the four previously recorded sites within the Corridor and newly recorded one site.

Of the four previously recorded sites located within the Corridor, two were previously recommended not eligible for the National Register of Historic Places (NRHP) and two remain unevaluated for the NRHP. The newly recorded site includes an historic building and cultural material scatter that was recommended not eligible for the NRHP.

NST Express has avoided both unevaluated sites by locating its construction ROW 15 feet west of each site boundary. Additionally, the site boundaries will be fenced and a qualified archaeological monitor will be present for ground-disturbing activities within 100 feet of each site boundary. With these conditions in place, the State Historical Society of North Dakota (SHSND) concurred with a recommended finding of no significant sites affected for the Project in a May 25, 2016 letter. Refer to Appendix D for related agency consultations, and Appendix E for the cultural resource survey report.

NST Express is preparing an Unanticipated Discoveries Plan (UDP) that sets forth measures to be implemented in the event previously unidentified cultural resources are encountered.

14.2 Wetland and Waterbody Inventory

Prior to conducting field surveys, Arcadis reviewed National Wetlands Inventory (NWI) data and National Hydrography Data to determine the location and extent of mapped wetlands and waterbodies within the Corridor. Field studies were completed for the Corridor on April 28 and 29, to confirm presence and/or absence of wetlands and waterbodies.

Arcadis identified two wetland features during field reconnaissance. Both of the wetlands were identified as likely U.S. Army Corps of Engineers (USACE) jurisdictional wetlands. Refer to Section 11.2, Special Construction Techniques, for a discussion of the proposed crossing technique for these areas. The Ecological Assessment Report provided in Appendix F contains additional information on these features and mapped locations. No USACE jurisdictional streams or surface waterbodies were identified during the field studies.

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14.3 Habitat Assessment

14.3.1 Tree/Sapling/Shrub Inventory

Field studies were completed within the Corridor on April 28 and 29, 2016 to identify the presence of tree and/or shrub species. In total, four tree areas, three shrub areas, and one tree and shrub area are located in the Corridor. Refer to the Ecological Assessment Report, Appendix F, for additional information on these features and mapped locations. NST Express plans to avoid all tree areas and avoid or minimize disturbance to shrub areas. If trees or shrubs, 1” diameter or greater at breast height cannot be avoided, such areas will be inventoried and mitigated in accordance with the Commission’s Tree and Shrub Mitigation Specifications.

14.3.2 Federally Protected Species

Those species federally listed as threatened, endangered, or candidate (TEC) by the U.S. Fish and Wildlife Service (USFWS) that could potentially occur in McKenzie County, North Dakota include: black-footed ferret (*Mustela nigripes*) (Endangered [E]), gray wolf (*Canis lupus*) (E), whooping crane (*Grus americana*) (E), least tern (*Sterna antillarum*) (E), pallid sturgeon (*Scaphirhynchus albus*) (E), piping plover (*Charadrius melodus*) (Threatened [T]), Dakota skipper (*Hesperia dacotae*) and critical habitat (T), red knot (*Calidris canutus rufa*) (T), and the northern long-eared bat (*Myotis septentrionalis*) (T). Refer to the Ecological Assessment Report, Appendix F, for additional information on these species.

Black-footed Ferret

Black-footed ferrets are listed as Endangered and Experimental / Non-essential in North Dakota. Black-footed ferrets are nocturnal, solitary carnivores of the weasel family. They have been largely extirpated from the wild primarily due to range-wide decimation of the prairie dog (*Cynomys* sp.) ecosystem due to sylvatic plague (Kotliar et al. 1999). Black-footed ferrets depend on prairie dogs as their primary food source and reside in prairie dog burrows (USFWS 2016). No prairie dog colonies occur within the Project area, therefore no impacts to this species are expected.

Gray Wolf

The gray wolf has been listed as endangered in the Rocky Mountain west since 1978. Populations in Idaho and Montana were delisted in 2011 due to recovery. A keystone predator, the gray wolf is an integral component of the ecosystems to which it typically belongs. The wide range of habitats in which wolves can thrive reflects their adaptability as a species, and includes temperate forests, mountains, tundra, taiga, and grasslands (USFWS 2015). Wolves are dependent upon movements of big game and they have the potential to occupy large ungulate migration or wintering areas. Due to a lack of forested habitat, distance from Minnesota and Manitoba populations, as well as the troubled relationship between humans and wolves (Licht and Huffman 1996), the re-establishment of gray wolf populations in North Dakota is unlikely. Since there is a lack of montane habitat and large prey bases within the Project area, no impacts to this species are expected.

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Whooping Crane

The whooping crane is listed as endangered in North Dakota. The whooping crane occurs only in North America and is North America's tallest bird, with males approaching 1.5 m (5 ft) when standing erect. Whooping cranes currently exist in the wild at 3 locations and in captivity at 12 sites. The July 2010 total wild population was estimated at 383. There is only one self-sustaining wild population, the Aransas-Wood Buffalo National Park population, which nests in Wood Buffalo National Park and adjacent areas in Canada, and winters in coastal marshes in Texas at Aransas. The Aransas Wood Buffalo population migrates through North Dakota. While the proposed Project will not impact nesting habitat, an incidental observation during the migration season is possible. If a whooping crane is observed within 1.0 mile of the ROW, NST Express plans to stop construction activities in that area until the whooping crane leaves. Since the Project does not occur in suitable nesting habitat no direct impacts to this species are anticipated.

Interior Least Tern

The least tern is listed as endangered within North Dakota. This species is the smallest member of the gull and tern family, measuring approximately nine inches in length. Unlike gulls, terns will dive into the water for small fish. In North Dakota, the least tern utilizes sparsely vegetated sandbars on the Missouri and Yellowstone Rivers. One reason for species decline has been attributed to construction of dams and river channelization throughout major waterways thereby reducing breeding habitats. The Missouri River and Yellowstone River are located over five and thirteen miles from the ROW, respectively. No shoreline habitats occur within the Project area, therefore no impacts to least terns are expected.

Pallid Sturgeon

The pallid sturgeon was listed as endangered in 1990 in the United States by the USFWS. The primary factor leading to the decline of this species is the alteration of habitat through river channelization, creation of impoundments, and alteration of flow regimes. These alterations within the Missouri and Yellowstone Rivers have blocked movements to spawning, feeding, and rearing areas; destroyed spawning habitat; altered flow conditions which can delay spawning cues; and reduced food sources by lowering productivity (USFWS 1990). Pallid sturgeons require large, turbid, free-flowing riverine habitat with rocky or sandy substrate (Gilbraith et al. 1988). The proposed Project is located over five miles from the Missouri River and over 13 miles from the Yellowstone River. Construction activities will not alter water quality or quantity of these rivers or their tributaries, therefore no adverse impacts to this species will occur.

Dakota Skipper

The Dakota skipper is a small to medium-sized North American butterfly with a wingspan of approximately one inch. More significant populations are thought to be in western Minnesota, northeastern South Dakota, north-central North Dakota and southern Manitoba. This species inhabits two types of prairies. One type is moist bluestem prairie in which three wildflower species are usually blooming when Dakota skippers are adults: wood lily (*Lilium philadelphicum*), harebell (*Campanula rotundifolia*) and smooth camas (*Zygadenus elegans*). The second type is upland prairie that is relatively dry and often found on ridges and hillsides.

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Bluestem grasses and needlegrasses dominate these prairies; purple coneflower (*Echinacea angustifolia*) is typical of high quality sites (USFWS 2016b).

The Dakota skipper was listed as threatened in 2014 and critical habitat for this species has been designated by USFWS. The closest area of designated critical habitat is identified as DS ND Unit 12, located over 32 miles east of the ROW in Township 153, North Range 96 West. The Project area does not contain native tall grass prairie communities dominated by little bluestem, big bluestem, prairie sandreed or other associated flora described above. Conversely the majority of proposed disturbance will occur on reclaimed ground or agricultural fields. Since the Project area lacks suitable habitat and does not contain a designated critical habitat, no adverse impacts to this species are expected.

Piping Plover

The piping plover is a small shorebird which breeds only in three geographic regions of North America: the Atlantic Coast, the Northern Great Plains, and the Great Lakes. The Northern Great Plains population including North Dakota is listed as Threatened. North Dakota is the most important State in the Great Plains for nesting piping plovers. More than three-fourths of plover in North Dakota nest on prairie alkali lakes, with the remainder using the Missouri River. The shorelines of lakes of the Missouri River constitute significant nesting areas for the bird. As part of the conservation strategy for this species critical habitat has been designated by USFWS including the shores of the Missouri River in North Dakota.

Suitable shoreline habitat for breeding and nesting plovers does not occur within the Project area and the ROW is located outside critical habitat. Due to a lack of suitable breeding and nesting habitat, the proposed Project should have no impact on piping plovers.

Rufa Red Knot

The red knot was listed as threatened on September 27, 2013. This bird is known to migrate over 9,300 miles from South America to the Arctic tundra every spring while repeating the trip in early fall (Boere et. al. 2006). The red knot nests in a scrape on the ground lined with leaves, lichens and moss usually near water. This species would likely only be passing through North Dakota as part of their annual migration and may exhibit avoidance to active construction. If a red knot is observed within 1.0 mile of the ROW during construction, NST Express plans stop construction activities in the area until the bird leaves. Since the Project does not contain suitable nesting habitat, no direct impacts to this species are anticipated.

Northern Long-eared Bat

The range of the northern long-eared bat occurs from Manitoba across southern Canada to Newfoundland, south to northern Florida, with Wyoming at the extreme western boundary. This bat primarily feeds and inhabits forested regions, including wooded riparian zones in badlands and prairies, to higher elevation conifer and deciduous woodlands. Hibernacula are known to occur in caves and abandoned mines that provide relatively constant, low temperatures, high humidity and no air currents. Due to the lack of forest habitat in the vicinity of the proposed

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Project it is unlikely that these bats would either roost or forage near the construction ROW. Therefore, the proposed Project should have no impact on the northern long-eared bat.

14.3.3 Migratory Bird Treaty Act

Trees and shrubs offer suitable nesting substrates for raptors and passerine bird species. As discussed further in Section 14.3.1, four tree areas, three shrub areas, and one tree and shrub area were documented within the Corridor. Such substrates were delineated with a Global Positioning System (GPS) receiver and photographed when encountered within the 100 feet of the centerline. Nest clearance surveys for migratory birds may be required if clearing and grading occurs during the breeding season, April 15 – August 1. If an active nest is found, appropriate buffers should be applied according to recommended conservation measures set forth by the USFWS. NST Express plans to avoid all tree areas and avoid or minimize disturbance to shrub areas. If trees or shrubs 1” diameter or greater at breast height, cannot be avoided, such areas will be inventoried and mitigated in accordance with the Commission’s Tree and Shrub Mitigation Specifications.

14.3.4 Bald and Golden Eagle Protection Act Consultation

Very few potential nesting substrates (i.e., mature trees, cliffs) capable of supporting eagle nests occur in the general area and no nests were found during field surveys. Furthermore, according to written communication received by Arcadis from the North Dakota Game and Fish Department (NDGFD) on May 23, 2016, the agency database indicates an absence of raptor nests within 1.0-mile of the Project. Please refer to Appendix D, Agency Correspondence/Consultation, for a copy of the written communication. However, before construction commences, NDGFD recommends conducting aerial raptor nest surveys and that a 0.5 mile construction buffer be implemented around active eagle nest sites. Refer to the Ecological Assessment Report, Appendix F, for additional information on these species.

15.0 CONSULTATION

In April 2016, Arcadis, on behalf of NST Express, sent letters to various agencies and officials, including those identified in NDAC § 69-06-01-05, providing information regarding the Project and requesting input. The responses received to date are summarized below. Please refer to Appendix D, Agency Correspondence/Consultation, for copies of the consultation communications sent and received.

15.1 U.S. Army Corps of Engineers

Arcadis, on behalf of NST Express, submitted a Project consultation letter to the USACE on April 11, 2016, providing opportunity to comment. A response letter was received, dated May 2, 2016, from the USACE. In summary, the letter requested additional Project details and stated that a USACE permit may be required.

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The Project does not cross any jurisdictional streams or drainages, therefore a permit is not required for compliance with Section 10 of the Rivers and Harbors Act. NST Express will obtain coverage under USACE Nationwide Permit 12 for temporary impacts to wetlands.

15.2 North Dakota Game and Fish Department

Arcadis, on behalf of NST Express, submitted a Project consultation letter to the NDGFD on April 11, 2016, providing opportunity to comment and requesting assessment of the analysis area for presence or absence of State Conservation Priority Species and NDGFD PLOTS Lands.

NDGFD responded via a letter dated May 3, 2016. In its letter, NDGFD discussed the following:

- It requested that work within native prairie and wooded draws be avoided and disturbed areas be reclaimed to pre-project conditions;
- It indicated that steps should be taken to protect wetlands that cannot be avoided, alterations should not be made to existing drainage patterns, above-ground appurtenances should not be placed in wetland areas, and unavoidable destruction and degradation of wetland acres should be mitigated in kind;
- It recommended aerial surveys for raptor nests prior to construction and a 0.5-mile construction buffer be implemented around active eagle nest activity, and recommend contacting Sandra Johnson, NDGFD, for possible eagle nest locations in the Project area.

NDGFD concluded that the Project will not have significant effects on wildlife or wildlife habitat, including species of conservation priority, provided its recommendations are implemented where appropriate. In a follow-up e-mail from Sandra Johnson on May 23, 2016, Ms. Johnson stated that, according to the agencies' database, no eagle nests or other raptor nests occur within 1.0-mile of the Project, and the closest golden eagle nest is more than 3 miles away. Ms. Johnson also states that there are no known prairie dog colonies, bighorn sheep or other sensitive species occurrences within 1.0 mile. NST Express plans to follow NDGFD's recommendations.

15.3 State Historical Society of North Dakota

Arcadis, on behalf of NST Express, submitted a Project consultation letter to the SHSND, on April 11, 2016, providing opportunity to comment.

On April 18, 2016, Arcadis received a letter response from the State Historical Society of North Dakota recommending a Class I (records search) and Class III (pedestrian) cultural resources inventory of the Project area, as there are recorded eligible sites in the general area of the Project.

Arcadis completed the requested Class I and Class III cultural resource inventories for the Project, and a report was submitted to the SHSND. The results of these investigations are discussed further in Section 14.1. In a letter dated May 25, 2016, the SHSND concurred with a

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recommended determination of “No Significant Sites Affected,” provided the Project follows the site avoidance recommendations set forth in the report.

15.4 North Dakota Department of Health

Arcadis, on behalf of NST Express, submitted a Project consultation letter to the North Dakota Department of Health (NDDH) on April 11, 2016, providing opportunity to comment.

In a letter dated May 5, 2016, NDDH stated that it believed that environmental impacts from the proposed Project will be minor and can be controlled by proper construction methods. NDDH also provided its construction and environmental disturbance requirements.

NST Express plans to comply with the NDDH’s construction and environmental disturbance requirements with respect to the Project.

15.5 North Dakota State Water Commission

Arcadis, on behalf of NST Express, submitted a Project consultation letter to the North Dakota State Water Commission (NDSWC) on April 11, 2016, providing opportunity to comment.

On April 20, 2016, Arcadis received a letter from the NDSWC. The NDSWC provided the following comments.

- No floodplains identified and/or mapped where this proposed project is located, and the project takes place in an area of No Special Flood Hazard Area. No floodplain permits are necessary from the McKenzie County relative to the National Flood Insurance Program.
- Recommended contacting the Western Area Water Supply Authority (WAWSA) regarding Western Area Water Supply project infrastructure that may be located in the project area.
- Noted it is the responsibility of the project sponsor to ensure that local, state and federal agencies are contacted for any required approvals, permits, and easements.
- Stated all waste material associated with the project must be disposed of properly and not placed in identified floodway areas.

On May 3, 2016 Arcadis called WAWSA to discuss any infrastructure located in the Project area. A map of the Project area was sent to WAWSA on May 4, 2016. In turn, the agency provided a digital infrastructure layer. When applied to Project maps the WTT pipeline intersects a WAWSA water line near the center of Section 19, Township 152 North, Range 101 West. NST Express will consult further with WAWSA regarding any crossing requirements.

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15.6 North Dakota Department of Commerce

Arcadis on behalf of NST Express, submitted a Project consultation letter to the North Dakota Department of Commerce, on April 11, 2016, providing opportunity to comment.

On April 15, 2016 Arcadis received a letter stating the project description had been reviewed through the North Dakota Federal Program Review Process and clearance has been given. A request was included to submit a future completed application to the office if duration, scope, description, budget or location changes. A request for the opportunity to review application for renewal or continuation grants within one year after the date of the later was also made.

15.7 North Dakota Department of Transportation

Arcadis, on behalf of NST Express, submitted a Project consultation letter to the North Dakota Department of Transportation (ND DOT), on April 11, 2016, providing opportunity to comment.

On April 26, 2016, Arcadis received a letter from the ND DOT stating the Project should have no adverse effects on the ND DOT highways. However, the letter stated that if any Project work needs to be done on highway right of way, appropriate permits and risk management documents will need to be obtained from the Department of Transportation District Engineer.

A permit will be obtained from the District Engineer for the crossing of Highway 85.

15.8 McKenzie County Commission

Arcadis, on behalf of NST Express, submitted a Project consultation letter to the McKenzie County Commission, on April 11, 2016, providing opportunity to comment.

On April 18, 2016 Arcadis received an e-mail from McKenzie County recommending that NST Express obtain a conditional use permit. NST Express has filed an application for, and is in the process of obtaining, a conditional use permit from McKenzie County for the Project.

16.0 SITING CRITERIA

16.1 Exclusion Areas

Per NDAC § 69-06-08-02(1), certain geographical areas shall be excluded from consideration for a transmission facility route. Exclusion areas may be located within a corridor, but at no given point may such an area or areas encompass more than fifty percent of the corridor unless there is no reasonable alternative.

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Table 1. 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	16.1.1
Designated or registered state parks, historic sites, monuments, historical markers, archaeological sites, and natural preserves.	N	N	N/A	16.1.2
County parks and recreational areas, municipal parks, and parks owned or administered by other governmental subdivisions	N	N	N/A	16.1.3
Areas critical to the life stages of threatened or endangered animal or plant species.	N	N	N/A	16.1.4
Areas where animal or plant species that are unique or rare to this state would be irreversibly damaged.	N	N	N/A	16.1.5
Areas within 1,200 feet of the geographic center of an intercontinental ballistic missile (ICBM) launch or launch control facility.	N	N	N/A	16.1.6
Areas within 30 feet on either side of a direct line between ICBM launch or launch control facility.	N	N	N/A	16.1.7

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16.1.1 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 landmarks, natural landmarks, monuments, or wilderness areas would be crossed by the Corridor or Route.

16.1.2 Designated or Registered State: Parks, Sites, Monuments, Archaeological Sites, and Natural Preserves

No designated or registered state parks, sites, monuments, archeological sites, natural preserves are crossed by the Corridor or Route.

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

No county parks and recreational areas, municipal parks, or parks owned or administered by other governmental subdivisions are crossed by the Corridor or Route.

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

No areas critical to the life stages of threatened or endangered animal or plant species are present within the Corridor or Route.

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

The Corridor and Route do not cross any areas where animal or plant species that are unique or rare to North Dakota would be irreversibly damaged from construction of the proposed Project.

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

Based on April 2015 correspondence from the U.S. Department of Defense (US DOD) and publicly available information, there are no Minot Air Force Base assets located in McKenzie County. The proposed Project Corridor and Route are not located within 1,200 feet of the geographic center of an intercontinental ballistic missile (ICBM) launch or launch control facility.

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

Based on April 2015 correspondence from the US DOD and publicly available information, there are no Minot Air Force Base assets located in McKenzie County. The proposed Project Corridor and Route are not located within 30 feet on either side of a direct line between ICBM launch or launch control facility.

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16.2 Avoidance Areas

Per 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 shall be implemented around these areas to protect their integrity, 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 fifty percent of the corridor unless there is no reasonable alternative.

Table 2. 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	16.2.1
Designated or registered state wild, scenic, or recreational rivers; game refuges; game management areas; management areas; forest; forest management lands; and grasslands.	N	N	N/A	16.2.2
Historical resources which are not specifically designated as exclusion or avoidance areas.	Y	N	Two cultural resource sites that remain unevaluated for NRHP-eligibility are located within the Corridor; however, these sites are avoided by the Route and encompass less than fifty percent of the Corridor.	16.2.3
Areas which are geologically unstable.	N	N	N/A	16.2.4

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Feature	Within Corridor (Y/N)	Route Crosses Y/N	Description	Section Addressed
Within 500 feet of a residence, school, or place of business.	Y	Y	While not within the Corridor or crossed by the Route, four mobile home units located on one property are located within 500 feet of the Project. NST Express plans to obtain a written waiver from the owner of the mobile homes.	16.2.5
Reservoirs and municipal water supplies.	N	N	N/A	16.2.6
Water sources for organized rural water districts.	N	N	N/A	16.2.7
Area of recreational significance which are not designated as exclusion areas.	N	N	N/A	16.2.8

16.2.1 Designated or Registered National Historic Districts; Wildlife Areas; Wild, 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 located within the Corridor or crossed by the Route.

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

No designated or registered state wild, scenic, recreational rivers; game refuges; game management areas; management areas; forest; forest management lands; or grasslands are within the Corridor or crossed by the Route.

16.2.3 Historical Resources Not Specifically Designated as Exclusion or Avoidance Areas

Two cultural resource sites that remain unevaluated for NRHP-eligibility are located within the Corridor; however, these sites are avoided by the Route and encompass less than fifty percent of the Corridor. See Section 14.1 of this Consolidated Application for additional information.

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16.2.4 Areas which are Geologically Unstable

The proposed Corridor and Route do not cross any areas of geologically unstable terrain.

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

No businesses or schools are located within 500 feet of the Corridor or Route. Four mobile home units located on one property (NENE Section 30, Township 152 North, Range 101 West) and associated with an assumed oil and gas facility are located within 500 feet of the Project. NST Express plans to obtain a written waiver of the 500-foot avoidance area criterion from the owner of the mobile homes.

16.2.6 Reservoirs and Municipal Water Supplies

No permitted groundwater wells (domestic or municipal) or reservoirs were identified in the Corridor or Route (North Dakota State Water Commission 2016). No waterbodies are crossed by the Corridor or Route, therefore no waterbodies that serve as reservoirs or municipal water sources will be affected by the Project.

16.2.7 Water Sources for Organized Rural Water Districts

Arcadis has utilized public information and made inquiries to the North Dakota Rural Water Association. Based on information obtained, the Project will have no impact on any water source for organized rural water districts.

16.2.8 Area of Recreational Significance Which Are Not Designated as Exclusion Areas

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

16.3 Selection Criteria

16.3.1 Agricultural Production

Agricultural land use comprises approximately 35% of the Study Area (LANDFIRE 2013). Wheat (*Triticum aestivum*) is the dominant crop in the Study Area.

The Project is not expected to impact (either permanently or temporarily) any prime farmland, and will only temporarily impact approximately 1.9 acres of farmland of statewide importance (Table 3). Once construction is complete, the construction ROW will be restored to its prior use, including in areas currently used for agricultural production. Thus, impacts along the Route are anticipated to be primarily temporary and minimal.

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Table 3. Farmland in Study Area

Type of Farmland	Acres in Study Area	Percent of Total Area in Corridor	Acres in Right-of-Way	Percent of Total Area in Right-of-Way
Prime Farmland	6.7	0.3	0	0
Farmland of Statewide Importance	283.9	10.3	1.9	9
Not Prime Farmland	2,462.9	89.4	19.5	91
Prime Farmland if Drained	0	0	0	0
Total	2,753.5	100.00	21.4	100.00

16.3.2 Family Farms and Ranches

There are 10 family farms and ranches located within the Study Area. Five farm and ranch units are crossed by the Route. Construction impacts to family farms and ranches would be short term and minor. The primary impact on family farms would be the loss of standing crops and use of the land within the work area during construction activities, as well as potential diminished yields following construction. NST Express will implement mitigation measures to minimize potential impacts to family farms and ranches, as outlined in the EMP (Appendix C).

Herbaceous rangeland suitable for livestock grazing comprises approximately 65% of the Study Area (LANDFIRE 2013). The primary impact on family ranches would be temporary prohibition of livestock grazing in the construction ROW and restrictions on livestock movement across the construction ROW during construction. In areas where livestock is confined or in cultivated fields, temporary “plugs” would be installed at regular intervals along the ROW to provide safe access for livestock and farm equipment across the open trench.

No long-term or permanent impacts are expected to family farms and ranches. Post-construction restoration would return the ROW to pre-construction contours, and farming and ranching operations could continue over the ROW. NST Express will acquire and compensate landowners for easements for the Project.

16.3.3 Land Economically Suitable for Irrigation

The Project is located primarily in upland dryland areas that are not suitable for irrigation unless a groundwater irrigation source is developed and the appropriate auxiliary equipment/infrastructure is utilized. There are no above ground appurtenances other than the infrastructure within facility boundaries. Therefore, the Project is unlikely to prohibit future irrigation infrastructure.

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16.3.4 Surface Drainage Patterns and Groundwater Flow Patterns

Surface Drainage

Surface drainage patterns will not be significantly altered by construction of the pipeline. Ephemeral draws, swales, ditches, and other natural drains will be restored to approximate pre-construction contours after construction is complete. The pipe will be installed to depths that will not interfere with flow or future maintenance efforts by landowners or the drainage authority.

Groundwater Flow Patterns

The Fox Hills and basal Hell Creek Aquifer system of the Late Cretaceous age underlies all of McKenzie County, at 1,100 to 1,800 feet below land surface. The aquifer system is recharged primarily by subsurface inflow from the adjacent areas to the south and by leakage from underlying beds. Groundwater generally moves northeastward; discharge from the aquifer is by outflow to the north and by upward leakage into the overlying aquifer systems. The aquifer system is used as a source for domestic, livestock, and industrial use.

The Ludlow Aquifer system overlies the Fox Hills and Hell Creek System at a depth of more than 500 feet. Overlying the Ludlow system is the Tongue River Aquifer at 140 to 500 feet below land surface. Most of the recharge to the Tongue River Aquifer is from precipitation and seepage from lakes and streams. These systems are relatively unused except for domestic and livestock supplies.

Stratigraphy beneath the Study Area is comprised of deposits of the upper Fort Union Group. These deposits are the Paleocene Sentinel Butte Formation. The Sentinel Butte Formation consists of inter-bedded sand, silt, mudstone, carbonaceous shale and lignite. The Sentinel Butte Formation is characterized by numerous 1- foot to 3-foot-thick lignite beds, and contains a prominent bentonite clay bed which has been referred to as the “blue bed”. The Study Area is located in an area where these thin lignite beds are present above this clay bed. The scoria being mined for road and well pad material represents a localized area where the lignite beds were burned in the past essentially “baking” the inter-bedded mudstones and clay above them. These baked clays and mudstones became highly fractured due to thermal alteration. In areas where the lignite beds did not burn, the scoria zones do not exist and the typical Sentinel Butte lithology remains as clay, mudstone and lignite beds that have very low hydraulic conductivities and groundwater aquifers are not present.

Localized surficial aquifers are generally present where glacial tills, alluvium and colluvium contain sufficient porosity and permeability allow groundwater to flow and accumulate. Typically, these localized occurrences contain groundwater with high total dissolved solids and these aquifers are not suitable for domestic supply but are used for stock water and irrigation.

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 as a result of the Project.

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16.3.5 Sound Sensitive Land Uses

The proposed Project would be constructed primarily through rural areas. Existing noise sources in rural areas are predominantly natural (i.e., wind, birds). Other sources of noise in rural and agricultural areas are roadway traffic, farm equipment, and oil and gas production and transportation facilities. Generally, background noise levels in rural areas vary between 40 and 50 dBA (McCain and Associates, Inc. 2011). Sound intensity is measured by the decibel (dB); the A-weighted decibel scale, denoted as dBA, 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.

Construction-related activities are expected to be short-term and during the daytime; therefore, impacts to local farm residents would be minimal. During operations, noise impacts would be limited to vehicles used to transport maintenance personnel at the ROW and aboveground facilities. The proposed Project would comply with applicable state and local noise requirements during construction and operations.

16.3.6 Visual Effect on Adjacent Areas

Effects of Project development on visual resources are assessed by the degree of modification and contrast 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 could attract the attention of the casual viewer. The number of viewers, their activities, and the extent their activities are related to the visual quality of the area determine the level of viewer sensitivity.

The Project is located in a rural setting that is sparsely populated. Views of the landscape would be limited to residents of homesteads, occasional views from area roadways, and oil and gas personnel; therefore, based on number of viewers and duration of their views, viewer sensitivity is considered low. The landscape is dominated by agricultural areas and non-native grassland species. With the exception of the aboveground facilities, the pipeline structure would be buried. During construction, removal of vegetation would create contrast within the landscape with the introduction of distinct lines in the landscape. Once vegetation is re-established within the construction ROW, long-term impacts to visual resources from Project development would not occur. Painting aboveground facilities with a color that blends with the existing landscape would help to reduce visual contrast in the existing landscape.

Visual impacts to the NST Express Alexander Facility and the Tesoro Break-Out Tank site would be minimal. The landscape at both facility sites has been or is in the process of being modified with above-ground infrastructure separate from the Project.

16.3.7 Extractive and Storage Resources

There is only one active extractive resource identified within the Study Area: oil and gas production. Coal and uranium deposits are not present within the Study Area (North Dakota Department of Mineral Resources 2015a, 2015b).

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U.S. oil production has grown rapidly over the last decade, primarily from new production in the Bakken Formation in North Dakota and the Eagle Ford in Texas (EIA 2014). Technological advances have contributed to the Bakken Formation's increased production in recent years. As of March 2016, North Dakota average daily production is 1.1 million bpd. Natural gas is also a valuable resource, contributing about 13% of a typical well's economic value (Davies 2013).

The proposed Project is located within the Williston Basin, a major oil and gas producing basin in western North Dakota. According to the North Dakota Department of Mineral Resources digital data, there are approximately 10 wells within the Study Area; 6 wells are active, 2 are reported as dry hole, and 2 are plugged and abandoned. There is the potential for the proposed construction ROW to be located near and impact existing oil and gas operating facilities.

To avoid potential impacts to existing oil and gas infrastructure, NST Express performed a centerline survey of the Route, and based on that survey, NST Express then identified all third-party entities encountered (e.g., natural gas, petroleum, water, electric). NST Express contacted, or will contact, each entity to obtain its respective crossing and encroachment guidelines and requirements. These requirements have been or will be incorporated, as applicable, into the design of the Project, and NST Express will continue to work closely with each entity during the construction and operation and maintenance phases in order to safely construct and operate the Project around, and minimize the potential for impacts to, existing facilities.

16.3.8 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 determine the presence of wetlands, woodlands, and wooded areas.

Field surveys conducted on April 28 and 29, 2016, identified these areas 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. Refer also to the Ecological Assessment Report in Appendix F.

16.3.9 Radio and Television Reception and Other Communication or Electronic Facilities

No communication towers are located within the Study Area. No additional radio and television reception and/or other communications and electronic facilities are located within the Corridor or Route. NST Express does not anticipate the Project will impact radio or television reception, or other communications and electronic facilities.

16.3.10 Human Health and Safety

Construction of the proposed Project could generate a possible risk to public safety from increased traffic (e.g., water trucks, heavy equipment). The increase in truck traffic would be temporary during construction.

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The transmission of oil by pipeline involves some risk to the public in the event of an accident and the release of oil. A release of crude oil during operation from a pipeline leak could contaminate soil and groundwater if a leak is not properly contained and remediated. The pipeline will be monitored using an electronic SCADA system 24 hours a day. PHMSA is the primary federal regulatory agency responsible for ensuring that pipelines are safe and reliable. During operations, safety measures would be implemented to comply with 49 CFR Part 195 as regulated by PHMSA.

As discussed in Section 12.0, to address potential impacts during operation, a SPCC Plan will be developed containing site-specific response plans, detailing emergency equipment availability and location, and identifying emergency contacts. Additionally, water trucks, portable water pumps, chemical fire extinguishers, hand tools, and heavy equipment would be available to address effects from fire during operation. In addition to the SPCC Plan, an IMP will be developed to outline pipeline integrity management procedures to be implemented during operation.

16.3.11 Animal Health and Safety

Wildlife currently inhabiting the Corridor is common and likely would not be displaced by the proposed Project. Temporary disturbance would occur during construction of the proposed Project. No direct, long-term impacts to wildlife are anticipated from the Project.

16.3.12 Plant Life

Plants currently inhabiting the Corridor are common. Impacts to plants in the Project area from the Project are anticipated to be minimal.

16.4 Policy Criteria

16.4.1 Location and Design

NST Express selected the proposed Corridor and Route based on a number of factors, including environmental, landowner, engineering, and constructability considerations. The proposed Route provides NST Express the opportunity to parallel existing infrastructure while minimizing landowner and environmental impacts. The location of the proposed Route also allows NST Express to interconnect the Tesoro Break-Out Tank and the NST Express Alexander Facility.

NST Express engaged landowners, conducted agency consultation, and performed a desktop analysis to identify constraints. These efforts provided information that informed the siting of the proposed Corridor and Route. Field surveys, including natural and cultural resource surveys, provided supplemental information that was used to further refine the Route to avoid or minimize impacts to sensitive resources.

16.4.2 Training and Use of In-State Labor

NST Express plans on using local, in-state labor to the extent practicable; however, construction of the pipeline and associated facilities requires employment of specialized skilled labor (e.g.,

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licensed welders). If resources for these specialized skilled workers are not available within the state, NST Express may need to extend employment outside of the state. NST Express expects to employ approximately 100 workers during construction.

16.4.3 Economies of Construction and Operation

The Project is the most cost-effective and operationally sound means of delivering light crude oil from the Tesoro Break-Out Tank to the NST Express Alexander Facility. Once the Project is constructed and online, NST Express will maintain and operate the Project in conjunction with its NST Express Pipeline and associated NST Express Alexander Facility, taking advantage of the associated economies of joint operation and minimizing annual maintenance and operation costs. The Project will also provide direct and indirect economic benefits to North Dakota.

16.4.4 Use of Citizen Coordinating Committees

NST Express has contacted and worked with landowners, local officials, and existing infrastructure owners during development of the proposed Project. No formal Citizen Coordinating Committees were used.

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

Crude oil transported by the Project to the NST Express Alexander Facility will ultimately be transported to refining markets throughout the United States. NST Express provides transportation services and does not determine where the product will ultimately be used.

16.4.6 Labor Relations

NST Express maintains positive labor relations with its staff and contract work force and does not anticipate encountering any adverse labor relations on this Project.

16.4.7 Coordination of Facilities

NST Express has identified utilities that would be affected by the proposed Route and has contacted, or will contact, each entity to obtain its respective crossing and encroachment guidelines and requirements. These requirements have been or will be incorporated, as applicable, into the design of the Project, and NST Express will continue to work closely with each entity during the construction and operation/maintenance phases in order to safely construct and operate the Project around, and minimize the potential for impacts to, existing facilities.

16.4.8 Monitoring Impacts

NST Express is committed to public safety and protection of the environment. NST Express will construct and operate the Project to meet or exceed all applicable federal, state, and local environmental laws, regulations, and standards to protect the environment, human health, wildlife, and natural resources, including regulations stipulated by PHMSA. An EMP has been developed specifically for this Project (see Appendix C).

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

Once the Project is in-service, NST Express will use a SCADA system to continuously (24/7) monitor and track pressure, temperature, and product flow in order to respond quickly to any potential issues. In addition, NST Express will monitor landowner and community concerns throughout Project operations and respond appropriately.

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

The NST Express proposed Route was sited to co-locate with existing utility corridors, roads, and other existing linear features to the extent practical. Approximately 2.8 miles of the Route is adjacent to existing utilities and other linear features.

16.4.10 Other Existing or Proposed Transmission Facilities

The Project will connect the Tesoro Break-Out Tank and the NST Express Alexander Facility, which will provide an additional outlet for crude oil from the Tesoro system, thereby removing an existing capacity constraint and enabling additional crude oil barrels to enter the system. As discussed in the Sections above, NST Express will continue to work closely with existing infrastructure owners to safely construct and operate the Project and minimize the potential for impacts to existing facilities.

17.0 IDENTIFICATION OF POTENTIAL PERMITS / APPROVALS

Table 4 below provides a list of potential federal, state, and local permits that may be needed for the Project.

Table 4. Potential Permits and Approvals

Agency	Permit/Approval	Status
Federal		
U.S. Army Corps of Engineers	Section 404 permit for dredge/fill in jurisdictional wetlands and waterbodies	Project will qualify for Nationwide Permit 12.
U.S. Fish and Wildlife Service (USFWS)	Consultation and review of the proposed Project regarding impact to federally protected species	Project does not require formal or informal consultation, but a letter requesting input regarding the Project was sent to USFWS.

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State		
North Dakota Public Service Commission	Certificate of Corridor Compatibility & Route Permit	Application pending.
North Dakota Department of Health, Water Quality Division	National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction Activity	Submit Notice of Intent and Stormwater Pollution Prevention Plan at least 7 days prior to construction.
	NPDES General Permit for Temporary Dewatering/Hydrostatic Testing	Submit application at least 30 days prior to discharge.
State Historical Society of North Dakota (SHSND)	Cultural and historic resources consultation and review	SHSND concurrence received on Class III cultural resource inventory report.
North Dakota Department of Transportation	Highway Crossing Permit	To be obtained prior to crossing state highway.
	State Highway Boring Permit	To be obtained prior to conducting highway boring.
	Oversize and Overweight Permit	To be obtained by construction contractor, as necessary.
Local		
McKenzie County	Conditional Use Permit	Application pending.
	Building Permit	To be obtained prior to construction.
	Utility Road Crossing Permits	To be obtained prior to crossing county/township roadways.
	Approach Permits	To be obtained prior to installing approach, if needed.
Tri Township	Utility Road and Section Line Crossing Permits	To be obtained prior to crossing township roadways, if needed.
	Approach Permits	To be obtained prior to installing approach, if needed.

18.0 EVALUATION OF NDCC SECTION 49-22-09 FACTORS

In selecting the corridor and Preferred Route for the Project, NST Express evaluated the factors set forth in NDCC Section 49-22-09. A discussion of each factor is provided below.

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

Refer to Sections 14.0 through 19.0 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

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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 routing around cultural resource sites, use of an archeological monitor during construction, and the use of HDD at certain road and other feature crossings. 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 24/7 via a SCADA system.

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

With the exception of aboveground facilities, unavoidable adverse direct and indirect environmental effects of the Project would be temporary and minimized wherever practicable through the use of mitigation measures and BMPs. With the exception of pipeline markers, all above-ground facilities will be located within the boundaries of existing facility sites; therefore, permanent impacts will be limited to the properties at those existing sites. See Sections 14.0 through 19.0 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

Refer to Section 13.0 of this Consolidated Application for a discussion of the route alternatives NST Express analyzed. NST Express 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, NST Express 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; gravel for improvements to access roads, if required; and petroleum products to power construction equipment, the pump, and other pipeline facilities.

18.7 Direct and Indirect Economic Impacts of the Facility

The Project's direct and indirect economic impacts include:

- Short-term employment opportunities arising from Project construction;
- Long-term employment opportunities arising from Project operation;
- Increased tax revenue; and
- Increased revenue from Project-related local expenditures (such as for gravel, fuel, lodging and food).

Additionally, the Project will provide a safe and efficient means to transport Bakken crude oil to an existing hub with connections to pipelines and a rail facility that can transport to markets throughout the United States, resulting in benefits to North Dakota producers and those with ties to Bakken crude oil production.

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

NST Express has consulted with various federal, state, and local governments, as well as landowners and existing infrastructure owners, regarding the Project. NST Express has not identified any potential conflicts with existing or planned developments. NST Express 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.

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

The Project avoids all known scenic areas, historic sites and structures, and cultural resources; therefore, the Project is not anticipated to impact these resources. For further discussion, please see Sections 14.1, 15.9, 16.0, 17.0, and 19.0 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

No areas that are unique because of biological wealth or because they are habitats for rare and endangered species are located within the Project Corridor or crossed by the Route; therefore, the Project is not anticipated to impact these resources. For further discussion, please see Sections 14.1, 15.9, 16.0, 17.0, and 19.0 of this Consolidated Application.

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

Section 15.0 summarizes agency consultations that have occurred to date. NST Express is actively consulting with federal, state, and local agencies and governments, and plans to address any problems or concerns raised.

19.0 OTHER FACTORS CONSIDERED

19.1 Design Construction Limitations

Specific factors taken into account in the selection of the Project Corridor and Route, including design and construction limitations, are identified in Sections 2.0 and 13.0 of this Consolidated Application, and discussed throughout. In particular, the Project was designed to facilitate transportation of crude oil between the Tesoro Break-Out Tank and the NST Express Alexander Facility. Additionally, crossings of existing infrastructure (e.g., pipeline, roads, and electric line) factored into Project design.

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 Project Corridor and Route, one of many factors NST Express 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 2.0 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 within and beyond North Dakota. As discussed in Section 18.7 of this Consolidated Application, the Project will provide a number of economic benefits, including short-term and long-term employment opportunities, increased tax revenue, and increased revenue from Project-related local expenditures. Additionally, the Project will provide a safe and efficient means to transport Bakken crude oil to an existing hub with connections to pipelines and a rail facility that can transport to markets throughout the United

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States, resulting in benefits to North Dakota producers and those with ties to Bakken crude oil production.

19.3 Present and Future Natural Resource Development

As discussed in Section 16.1.1, there are no designated or registered national parks, memorial parks, historic sites or landmarks, monuments, or wilderness areas located within the Project Corridor or Route. Similarly, there are no designated or registered state parks, historic sites, monuments, historical markers, archaeological sites, or nature preserves crossed by the Project Route. Two cultural resource sites potentially eligible for NRHP listing were identified within the Corridor, but are avoided by the Route and encompass less than fifty percent of the Corridor. There are also no county parks, recreational areas, municipal parks, or parks owned or administered by other governmental subdivisions within the Corridor or Route.

In addition, as discussed in Section 16.2.1, there are no designated or registered national historic districts, wildlife areas, wild, scenic, or recreational rivers, wildlife refuges, or grasslands within the Project Corridor or Route. There are also no designated or registered state wild, scenic, or recreational rivers, game refuges, game management areas, forests, forest management lands, or grasslands crossed by the Project Corridor or Route.

The Project avoids all current USFWS fee-title lands and easement interests.

The Project would primarily cross land used for agriculture and grazing. Once construction is complete, areas of the ROW outside of the facility sites will be restored to its prior use, including in areas currently used for agricultural production. Further, as discussed in Sections 16.3.7 and 16.4.7, NST will continue to work closely with existing and planned oil and gas development facilities to safely construct and operate the Project and minimize the potential for impacts to existing facilities. Thus, impacts along the Route are anticipated to be primarily temporary and minimal.

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

NST Express 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. Specifically, the Project has been routed and designed to take advantage of existing infrastructure. The Project has also been designed, and 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 Combined Application, NST Express has developed an EMP (Appendix C) that 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:

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- General mitigation measures;
- Spill prevention;
- Temporary erosion and sediment control;
- Highway, road, and railroad crossings;
- Uplands;
- Wetland crossings;
- Waterbodies and riparian areas; and,
- Hydrostatic testing.

NST Express is also developing a Stormwater Pollution Prevention Plan (SWPPP), a SPCC Plan, a UDP, and an IMP for the Project.

21.0 QUALIFICATIONS OF PREPARERS

Mr. Boe Gregson

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Mr. Gregson has worked in the consulting industry for the past ten years with a focus on the oversight of all aspects of energy permitting/development (i.e., archaeology, wildlife, leasing, operations, survey, geographical information systems (GIS), and environmental permitting – SWPPP, SPCC Plan, National Pollutant Discharge Elimination System [NPDES], etc.). Mr. Gregson has been involved in the Bakken oil and gas development area by completing projects comprising of over a thousand miles of pipeline and hundreds of well sites. His experience spans many states including the Dakotas, Wyoming, Montana, Colorado, and Pennsylvania. B.S. Soil and Crop Sciences – Colorado State University, Fort Collins, Colorado.

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Ms. Smith assists clients with pipeline, transmission line and wind farm permitting matters in North 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, and certificate of need, route permit and site permit proceedings before the Minnesota Public Utilities Commission. B.A. English - Northern State University, Aberdeen, SD; M.A. Literature -

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