

# SWCA

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SWCA Environmental Consultants

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- D Natural Resources Report
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### Acronyms and Abbreviations

ANS	Aquatic Nuisance Species
BMP	Best Management Practice
BNSF	Burlington Northern Santa Fe
BOR	Bureau of Reclamation
bpd	barrels per day
CFR	Code of Federal Regulations
Commission	North Dakota Public Service Commission
Consolidated Application	Consolidated Certificate of Corridor Compatibility and Route Permit Application
dB	decibel
E	Endangered
GIS	geographic information system
HDD	horizontal directional drilling
NDAC	North Dakota Administrative Code
NDCC	North Dakota Century Code
NDDTL	North Dakota Department of Trust Lands
NDGF	North Dakota Game and Fish Department
NDPRD	North Dakota Parks and Recreation Department
NDSWC	North Dakota State Water Commission
NRHP	National Register of Historic Places
NST Express	NST Express, LLC
NST Transload	NST Transload Operating Company, LLC
PHMSA	Pipeline Hazardous Materials Safety Administration
Project	NST Express Pipeline Project
ROW	right-of-way
SCADA	supervisory control and data acquisition system
SHPO	State Historic Preservation Office
SWCA	SWCA Environmental Consultants
T	Threatened
USACE	U.S. Army Corps of Engineers
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service

## Checklist for Combined Corridor Compatibility and Route Permit Application

Authority	Description	Section(s)
<b>Chapter 49-22 CENTURY CODE – Title 49</b>		
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	19.0
1.h.	Corridor evaluation pursuant to 49-22-09 and 49-22-05.1	16.1, 16.2, 17.0
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, 17.0
1.d.	Mitigating measures	19.0
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	18.0
49-22-09	Factors to be considered in evaluating corridor and route applications	17.0
1	Research and investigation into effects of the project on public health, welfare, natural resources, and the environment	17.1
2	Effects of transmission technology and design to minimize adverse effects	17.2
3	Potential beneficial uses of waste energy from energy conversion facility	17.3
4	Unavoidable adverse direct and indirect environmental effects	17.4
5	Corridor or route alternatives developed during the hearing which minimize adverse effects	17.5
6	Irreversible and irretrievable commitments of natural resources if designated	17.6
7	Direct and indirect economic impacts of the facility	17.7
8	Existing plans for other developments at or in the vicinity	17.8
9	Effect of project on scenic areas, historic sites and structures, paleontological and archaeological sites	17.9
10	Effect of route on unique biological areas	17.10
11	Problems raised by federal, state, or local entities	17.11
<b>ADMINISTRATIVE CODE – ARTICLE 69-06</b>		
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

<b>Authority</b>	<b>Description</b>	<b>Section(s)</b>
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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
2.a.(7)(h)	The pipe size	9.1.3
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2.b.(3)	Completing right-of-way acquisition	7.3
2.b.(4)	Starting construction	7.4
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2.b.(6)	Testing operations	7.6
2.b.(7)	Commencing operations	7.7
2.c.	A copy of each evaluative study or assessment of environmental impact of the proposed facility submitted to the agencies listed in section 69-06-01-05 and each response received	Appendix E
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, 17.0
2.h.	Discussion of factors in Century Code 49-22-09 to aid Commission's evaluation	17.0
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.	19.0
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, 17.0
2.l.	Mitigating measures	19.0
2.m.	Qualifications of each person involved in location study	20.0
2.n.	Map identifying criteria that led to the route location and new facilities	Appendix A

Authority	Description	Section(s)
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2.p.	Discussion of present and future natural resource development in the area	18.3
2.q.	Maps and GIS data meeting PSC requirements	Appendix A
69-06-06-01	Application for Waiver of Procedures and Time Schedule	
69-06-08-02	Transmission Facility Corridor and Route Criteria	
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1.c.	County parks and recreational areas, municipal parks, parks owned or administered by other governmental subdivisions	16.1.3
1.d.	Areas of critical habitat	16.1.4
1.e.	Areas where unique or rare species would be irreversibly damaged	16.1.5
1.f.	Area within 1,200 feet of ICBM facility	16.1.6
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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
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
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3	Selection criteria. Impact on:	16.3
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<b>Authority</b>	<b>Description</b>	<b>Section(s)</b>
3.b.(6)	Human health and safety	16.3.10
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4.e.	Commitment of portion of transmitted product for use in state	16.4.5
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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

## **Introduction**

NST Express, LLC (NST Express) proposes to construct an approximately 23-mile-long crude oil pipeline and associated facilities in McKenzie County, North Dakota. The pipeline will originate at a proposed gathering facility north of Alexander, North Dakota, and terminate at an existing rail loading terminal located north of East Fairview, North Dakota. The proposed pipeline and associated facilities are referred to as the NST Express Pipeline Project (Project). The Project is entirely located in McKenzie County, North Dakota (Figures 1 and 2).

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 an existing rail terminal from which the crude oil can reach major U.S. markets via the Burlington Northern Santa Fe (BNSF) Railway. The Project will have a capacity of up to 100,000 barrels per day (bpd).

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 storage and transport of crude oil. The underground, 12-inch pipeline will be approximately 23 miles long and will commence at a proposed gathering facility located approximately 9 miles north of Alexander, North Dakota (NST Express Alexander Facility). The proposed NST Express Alexander Facility will be located on approximately 42 acres of land and will serve as a market hub, receiving Bakken crude oil from offloading tanker trucks and up to six inbound pipelines.

At its terminus, the Project will interconnect to an existing NST Transload Operating Company, LLC (NST Transload) rail loading terminal (NST Transload East Fairview Facility) located approximately 0.5 mile north of East Fairview, North Dakota.

The new 12-inch pipeline will extend west and south between the NST Express Alexander Facility on the east and the NST Transload East Fairview Facility on the west. The Project will provide a maximum flow rate of 100,000 bpd. The Project may be constructed with unilateral flow from the NST Express Alexander Facility or bidirectional flow from either the NST Express Alexander Facility or the NST Transload East Fairview Facility, based on commercial demand.

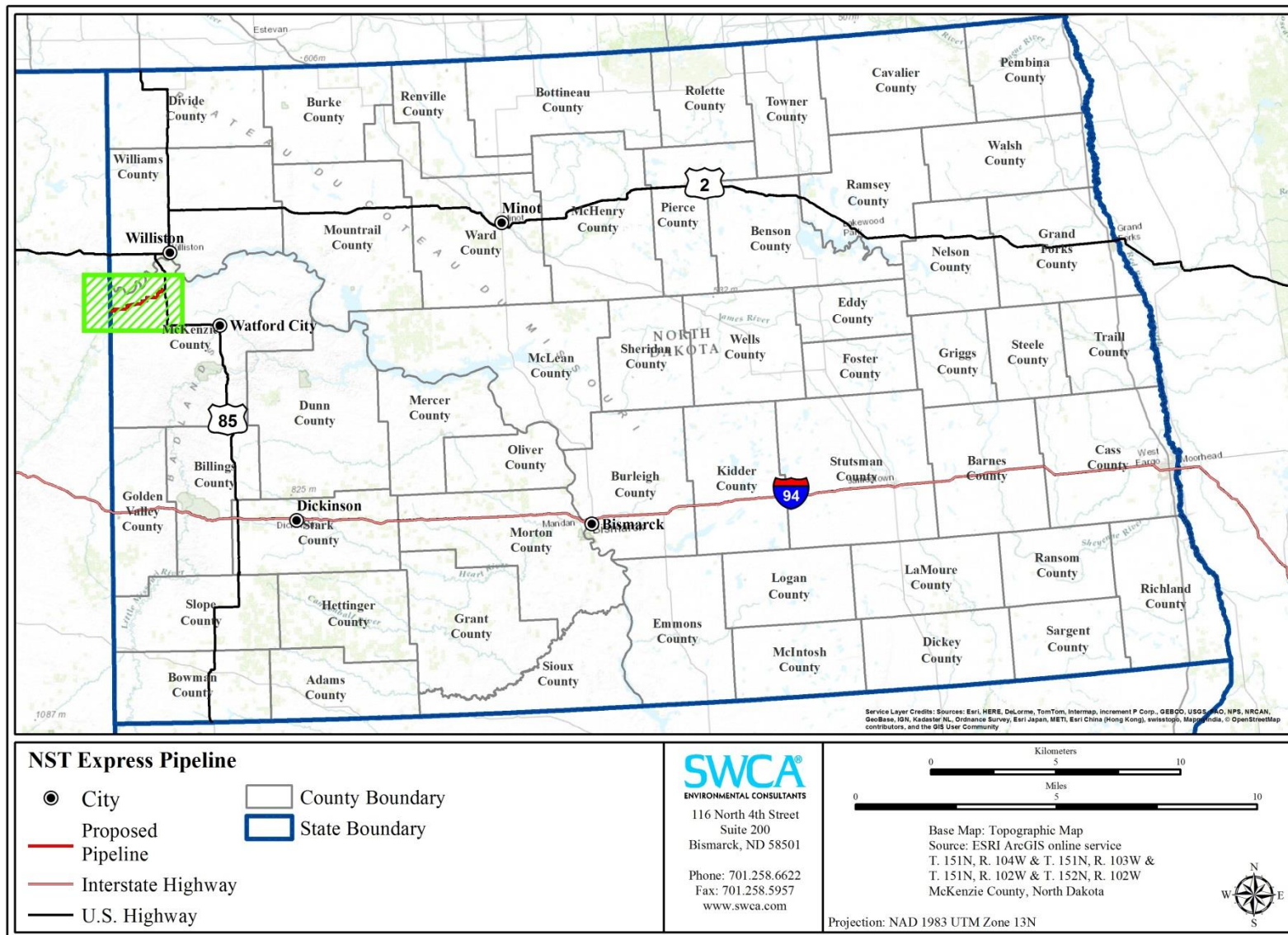


Figure 1. Overview of NST Express Project Route

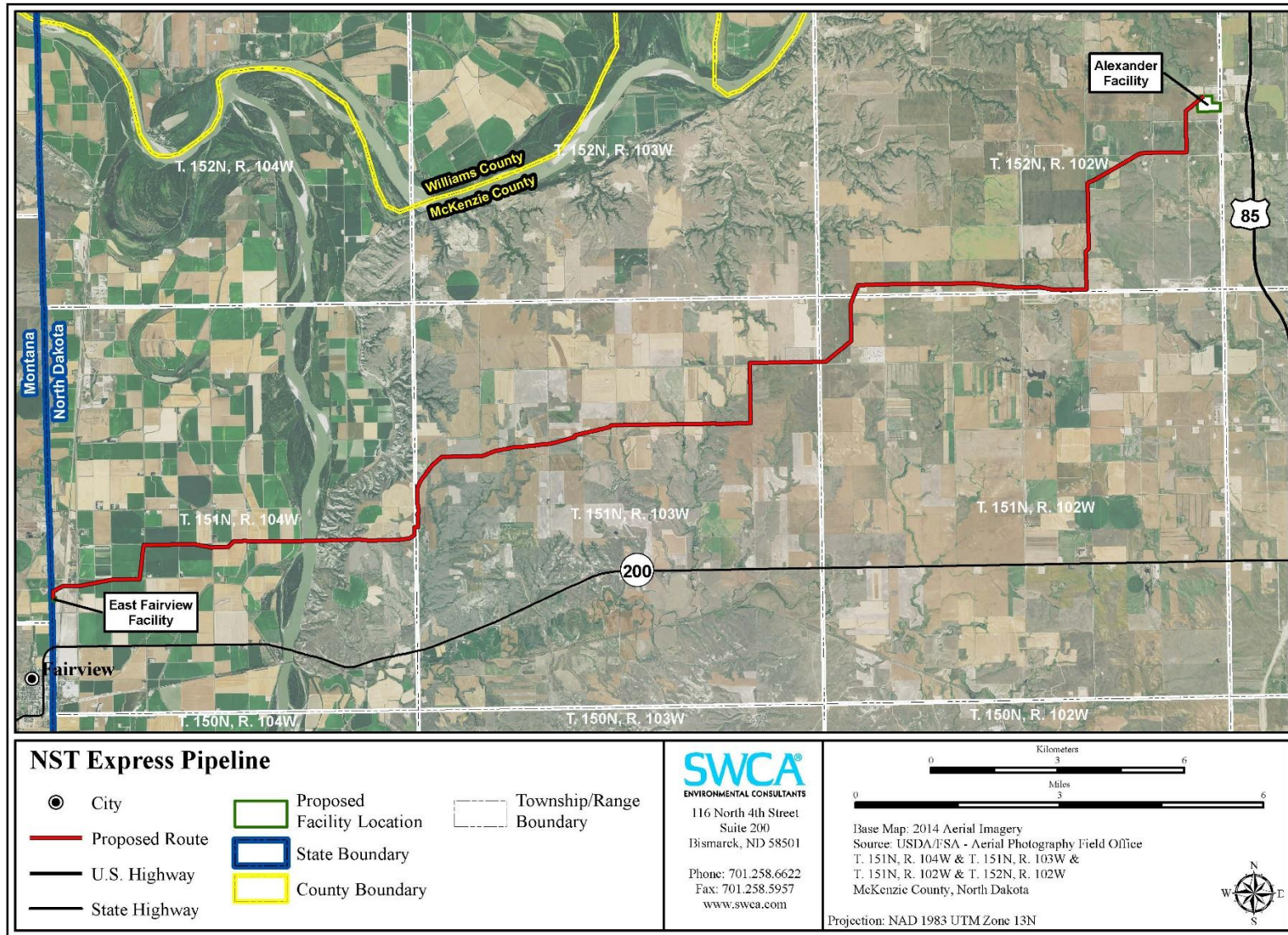


Figure 2. NST Express Project Route

To accommodate the Project's unilateral flow design, the NST Express Alexander Facility would consist of four truck Lease Automatic Custody Transfer offload skids, up to six pipeline connections, up to three aboveground storage tanks with a capacity of 50,000 barrels each, a tank booster, a pig launcher, a turbine meter run, and a pump station. Upon receipt of crude oil at the NST Express Alexander Facility, the crude oil would be transferred to the NST Express Alexander Facility's aboveground storage tanks and then transported by the proposed pipeline to the NST Transload East Fairview Facility.

At the NST Transload East Fairview Facility, the Project interconnection facilities to be constructed would include a scraper receiving trap, a pig receiver, one new turbine meter, piping to interconnect with existing tanks, and equipment and panels for Programmable Logic Controller/Open Multi-Network Integration Control Equipment and Supervisory Control and Data Acquisition (SCADA) communications. The Project interconnection facilities would be constructed on an approximately 300- by 260-foot section of land within the existing NST Transload East Fairview Facility.

Five mainline valves would be located along the pipeline, with one located within the Alexander Facility site, and one located within the NST Transload East Fairview Facility site.

To accommodate bidirectional flow at the NST Express Alexander Facility, a design similar to that for unilateral flow would be required. A booster pump and horizontal mainline pump would be required to be installed within the existing NST Transload East Fairview Facility. Additional electrical upgrades and piping manifold and valve additions would be needed to reverse the flow from the NST Express Alexander Facility to the NST Transload East Fairview Facility.

## **2.0 Location**

### **2.1 Project Study Area**

With the exception of the cultural resource literature search, NST Express defined its study area as a 2.3-mile-wide corridor from the NST Express Alexander Facility to the NST Transload East Fairview Facility, which incorporated the site at the NST Transload East Fairview Facility, and a 1-mile-wide radius surrounding the proposed NST Express Alexander Facility (Study Area). For the cultural resource literature search, the study area was 0.5 mile on either side of the proposed centerline, which incorporated the proposed facility sites (Cultural Resource Study Area).

### **2.2 Preferred Location of Project Corridor and Route**

NST Express is seeking approval of a corridor that aligns with the survey corridor used for conducting environmental field surveys. The survey corridor is 200 feet wide, centered on the proposed alignment, an approximate 42-acre block for the NST Express Alexander facility, and an approximate 2-acre block for installation of Project facilities at the NST Transload East Fairview Facility (Corridor). The location and width of the proposed Corridor are illustrated on the aerial maps in Appendix A. The location of proposed route (Route) within the proposed Corridor is also depicted on the aerial maps provided in Appendix A.

NST Express dedicated a significant amount of work to selecting its Corridor and the Route. NST Express first 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 rights-of-way (ROWs) (e.g., pipelines, roads, railroads, 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. 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 proposed market hub at the NST Express Alexander Facility near Alexander, North Dakota, through the NST Express pipeline to the existing NST Transload East Fairview Facility near East Fairview, North Dakota. The NST Transload East Fairview Facility transports crude oil via the BNSF Railway to the west, east, and potentially Gulf Coast markets, thus providing producers with greater options for markets and pricing. The Project will also provide producers with the ability to reduce or eliminate truck haul distances.

The Project will directly benefit North Dakota producers that interconnect with or offload tanker trucks at the NST Express Alexander Facility. The Project will allow 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.

The Project will also 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.

Finally, the Project will improve overall safety to the public and the environment by reducing crude oil shipments by truck along the pipeline route. Pipelines provide a safe and efficient means of transporting crude oil, and federal regulation of pipelines subjects them to considerable scrutiny and oversight.

## **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.

### **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 via interconnections with the Project or by rail via the NST Transload East Fairview Facility.

## **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 the following.

- Use of an external protective coating and cathodic protection to prevent external pipeline 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.
- Installation of mainline valves with remote actuators on either side the Yellowstone River, allowing remote closure of valves in the event of an emergency.

Construction and installation of the pipeline will use different techniques to avoid or minimize impacts to sensitive areas and identified road/railroad crossings, such as trenchless construction methods (horizontal directional drilling [HDD] and boring). These techniques are discussed further in Section 11.0 below.

## **6.0 Estimated Total Cost for Construction**

The estimated total cost for construction is \$60–\$80 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 2015.

### **7.2 Obtaining Route Permit**

NST Express requests a Certificate of Corridor Compatibility and Route Permit from the Commission in September 2015.

### **7.3 Completing Right-of-Way Acquisition**

NST Express initiated ROW acquisition on April 27, 2015, with expected completion by mid-to late summer of 2015.

### **7.4 Starting Construction**

Construction for the NST Express Alexander Facility is scheduled to begin in October 2015.

### **7.5 Completing Construction**

NST Express expects to complete construction of the Project by September 2016.

### **7.6 Testing Operations**

NST Express expects to conduct testing of the pipeline and associated site facilities during the fall of 2016.

### **7.7 Commencing Operations**

The Project is anticipated to be operational no later than October 2016.

## **8.0 Ten-Year Plan**

NST Express filed its Ten-Year Plan for 2015 through 2025 with the Commission on May 28, 2015. 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, aboveground facilities, the NST Express Alexander Facility, and the interconnection to the existing NST Transload East Fairview Facility.

## **9.1 Pipeline**

### **9.1.1 Width of Right-of-Way**

In general, the Project pipeline will be installed using a 100-foot-wide construction ROW. Refer to the Topsoil Salvage Trench and Spoil Side schematic in Appendix A for an overview of the proposed Project ROW. The construction ROW will expand to 150 feet in some areas, depending on topography or other constraining land features, such as at river, road, irrigation ditch, and railroad crossings. The Project pipeline will require a 50-foot-wide permanent easement and access driveways/roads for operations and maintenance.

### **9.1.2 Length of Facility**

The pipeline route is approximately 23 miles long, originating at the proposed NST Express Alexander Facility and terminating at the NST Transload East Fairview Facility.

### **9.1.3 Pipe Size**

The Project will require installation of a 12-inch outside-diameter steel pipeline with a nominal wall thickness of 0.375 inch. The nominal wall thickness will increase to 0.50 inch for specific locations, such as waterbody and road crossings. The pipe material will be AP5L 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 120 degrees Fahrenheit.

## **9.2 Aboveground Facilities**

### **9.2.1 General Location of New Associated Facilities**

The proposed NST Express Alexander Facility will be located on approximately 42 acres of land, an estimated 9 miles north of Alexander, North Dakota, in Section 24, Township 152 North, Range 102 West. The facility will be accessible via Highway 16 (39<sup>th</sup> Street NW). See Appendix A for a map showing the NST Express Alexander Facility layout.

The currently existing NST Transload East Fairview Facility is located approximately 0.5 mile north of East Fairview, North Dakota, in Section 30, Township 151 North, Range 104 West. The Project interconnection facilities will be constructed on an approximately 300- by 260-foot section of land within the western portion of the existing NST Transload East Fairview Facility. Appendix A includes a map identifying the NST Transload East Fairview Facility layout.

A pig launcher and receiver for pipeline in-line integrity inspections will be located within the fenced areas of the NST Express Alexander Facility and the NST Transload East Fairview Facility, respectively.

Five mainline valves will be located throughout the pipeline. Two automated valves will be located at the Yellowstone River crossing, with one valve on each side of the crossing. The remaining three valves will be manual valves, with one located at the NST Express Alexander Facility trap (within the fenced area of the facility), one located at approximately milepost 9.5 (referred to as the Dore Junction valve), and one located at the NST Transload East Fairview Facility trap (within the fenced area of the facility).

#### 9.2.2 Estimated Distance between Surface Structures

The estimated distance between the NST Express Alexander Facility and the NST Transload East Fairview Facility is 23 miles. See Table 1 below for the approximate distances between the surface structures associated with the Project.

**Table 1. Distance between Surface Structures**

<b>From</b>	<b>To</b>	<b>Approximate Mileage</b>
NST Express Alexander Facility	Dore Junction Valve	9.4 miles
Dore Junction Valve	Yellowstone River Valve #1	7.3 miles
Yellowstone River Valve #1	Yellowstone River Valve #2	2.0 miles
Yellowstone River Valve #2	NST Transload East Fairview Facility	4.0 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 new pipeline is 100,000 bpd.

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

One pumping station will be located within the fenced area of the NST Express Alexander Facility. The pumping station will contain one vertical booster pump and one horizontal pump. An additional booster and horizontal pump will be required at the NST Transload East Fairview Facility to accommodate bidirectional flow.

## **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 sent introductory mailings to identified landowners and then contacted landowners via telephone to schedule in-person visits. During in-person meetings with landowners, NST Express land agents presented proposed route maps for landowner review and input. NST Express used landowner input for route planning purposes and, when possible, made adjustments in the proposed route to accommodate landowner concerns. When landowners were located out of state, NST Express provided Project information via telephone and mail.

NST Express obtained preliminary approval from all landowners along the Route and has obtained all necessary survey permissions. NST Express has commenced negotiations with landowners for acquisition of option agreements to obtain ROW easements.

NST Express has acquired the Alexander Facility site in fee, and will use land owned in fee by NST Transload Operating Company, LLC, for Project-related facilities at the NST Transload East Fairview Facility.

## **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 careful 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 loss of marketable trees or 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 Code of Federal Regulations (CFR) Part 195, U.S. Department of Labor regulations, Occupation Safety and Health Administration requirements, and other applicable federal and state regulations. Among other design standards, 49 CFR Part 195 specifies pipeline material selection; minimum design requirements; protection from internal, external, and atmospheric corrosion; and qualification procedures for welding and operations personnel.

Prior to 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 would only take place during daylight hours. Spill prevention measures would be in place to maintain construction personnel safety and to protect the environment. Access to the ROW would be controlled to allow only authorized vehicles to maintain public and construction personnel safety.

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 drawing in Appendix A). Each of these activities is discussed in more detail below.

#### 11.1.1 Clearing and Grading

Once the limits of the approved work area (the construction ROW and temporary workspaces), pipeline centerline, access roads, aboveground facilities, and sensitive areas, 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. Where topsoil was not stripped on the working side of the ROW, a paraplow or a ripper with shanks will be used to decompact soil resulting from heavy equipment traffic.

After pipeline installation is complete, the subsoil would be replaced in the pipeline trench and the adjacent areas to restore the land's natural contours. Then the topsoil would be replaced in the locations from which it was originally removed. Construction activities would be suspended during abnormally wet conditions to prevent excessive rutting or mixing of topsoil with subsurface soils. Refer to the Pipeline Construction Sequence and Topsoil Salvage Trench and Spoil Side schematic drawings for additional detail.

Fences and gates would be constructed during the clearing and grading operations to allow continuous use of pastures, grazing units, and livestock facilities. Best Management Practices (BMPs) such as silt fences would be installed along the ROW adjacent to wetlands and streams. Temporary erosion controls would be installed after initial disturbance of soils, where necessary, to minimize erosion. Erosion control BMPs would be maintained throughout construction.

#### 11.1.2 Trenching

Trenches would be excavated using a wheel 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 fences, gates, and/or bridges would be installed to provide appropriate restriction or safe access 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 are typically 40 to 80 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.

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.

#### 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, stream crossings, 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**

### **Boring Method**

NST Express will use a slick-bore process for boring under roads and irrigation canal crossings. An entry bore pit and exit bore pit will be excavated on both sides of the crossing. The boring machine shall be placed in the entry pit where it will drill a pilot hole through to the exit pit. This hole will then be widened to accept the carrier pipe by back reaming. A section of pipeline that is already welded together, inspected, and pressure tested is then pulled back through the drilled hole. The minimum depth of cover for these road and irrigation canal crossings shall be 5 feet or greater depending upon the minimum depth as specified by the crossing permit. The bored crossing pipe will extend at least 10 feet beyond either side of the road ROW and 25 feet beyond the toe of the canals. A pipeline marker shall be placed at either end of the bored crossing when completed.

### **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 would be constructed using the conventional bore method. Little or no traffic disruption is expected when using the bore 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 Bored Road Crossing schematic drawing in Appendix A.

### **Waterbody Crossings**

“Waterbody” includes any natural or artificial stream, river, or drainage with perceptible flow at the time of crossing, and other permanent waterbodies, such as ponds and lakes. Waterbody crossings would be constructed in accordance with applicable permits. Waterbody crossings would be constructed using open cut trenching and/or HDD technology. The methodology for each waterbody locations would be determined by the crossing size and sensitivity.

The proposed Project stormwater pollution prevention plan would specify measures based on BMPs that would address erosion control, equipment refueling, temporary bridge crossings, construction timing and methods, and restoration. Temporary workspaces are typically required on each side of a waterbody crossing to stage construction, fabricate the pipeline, and store materials. Temporary workspaces would be located within the ROW at upland areas a minimum of 50 feet from the waterbody edge. Trench spoils would be stored at least 10 feet from the waterbody banks (topography permitting). Sediment barriers, such as a silt fence, would be installed to prevent spoil and sediment-laden water from entering the waterbody.

### **Horizontal Directional Drill 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 in two locations along the Project: crossing the Yellowstone River; and an area on the west end of the Project in order to avoid multiple features in close proximity (the BNSF railroad, irrigation canals, and Highway 58).

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.

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 Waterbody Crossing Horizontal Directional Drill schematic drawing in Appendix A.

### **Yellowstone River Crossing**

As noted above, NST Express plans to use HDD to cross the Yellowstone River between approximately mileposts 17.5 and 18.7. NST Express has implemented or will implement the following design and construction measures to avoid or minimize any potential for impacts.

- Develop a detailed HDD profile and design using subgrade condition data obtained from soil borings obtained from each side of the river at the planned crossing points.
- Develop an accurate profile of the river bed and monitor drilling mud pressure throughout the drilling process to minimize the potential for drilling mud release.
- Increase pipe wall thickness to 0.50 inch to minimize the potential for pipe stress impacts during installation.
- Hydrostatically test the pipe to validate integrity prior to installation.
- Maintain a condition-specific minimum drill bend radius to limit pipe stress during installation.

In addition, NST Express will install automated valves on either side of the river. In the event that monitoring sensors detect a loss of pipeline pressure anywhere along the pipeline, the valves can be shut down remotely to stop flow to and isolate the river crossing.

NST Express will obtain a Section 10 permit from the U.S. Army Corps of Engineers (USACE) for the Yellowstone River crossing. NST Express has been in consultation with the USACE regarding the river crossing, and will continue to coordinate with the USACE throughout construction and operation of the Project.

A Sovereign Lands Permit is required by the North Dakota State Water Commission (NDSWC) for the Yellowstone River Crossing. NST Express has been in consultation with the NDSWC and will complete the Sovereign Lands Permit prior to the construction of the Project.

### **West End of Project**

On the west end of the Project, between mileposts 22.2 and 22.4, NST Express plans to conduct HDD under certain features located in close proximity to one another, including the BNSF railroad, Highway 58, and U.S. Department of the Interior, Bureau of Reclamation (BOR) maintained irrigation ditches (see further discussion of irrigation ditches below). Conducting HDD is the most economical and efficient means of ensuring Project compliance with the various feature depth of cover requirements.

NST Express is aware of potential plans to expand and add turn lanes to Highway 58, which could require relocation of a BOR irrigation ditch on the east side of the highway. NST Express will coordinate with the road authority and BOR regarding, and will adjust its HDD as necessary to accommodate, the road expansion.

### **Wetland Crossings**

Where the Project crosses wetlands, NST Express proposes to open cut these areas. NST Express has implemented or will implement the following design and construction measures to avoid or minimize any potential impacts.

- Use wooden matting to protect the area from disturbance.
- 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.

### **Stream Crossings**

Where the Project crosses streams, NST Express will use single matting to bridge stream crossings, when possible. In larger water crossings, NST Express may use wooden bridges, mats, and/or “air bridges” to minimize disturbance.

### **Irrigation Ditches**

The Project will cross drainage ditches, lateral ditches (which deliver water to farm ditches), and farm ditches within the Lower Yellowstone Irrigation District that are managed by the BOR. In coordination with the BOR, NST Express identified the location of and the appropriate depth of cover for each type of BOR ditch to be crossed. The depths of cover that will be maintained are as follows.

- BOR Drain Ditches: Depth of cover of at least 13 feet
- BOR Lateral Ditches: Depth of cover of at least 8 feet
- BOR Farm Ditches: Depth of cover of at least 5 feet

The BOR drain ditches located between mileposts 22.2 and 22.4 will be crossed using HDD (see discussion above). With respect to the remaining ditches, NST Express will bore beneath each ditch.

NST Express will obtain all necessary permits and approvals from the BOR for the crossings, and will continue to coordinate with the BOR as needed throughout Project construction and operation.

### **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 U.S. Department of Agriculture, Natural Resources Conservation Service or as required by the landowner. Specific restoration measures are described in the Environmental Mitigation Plan, 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 Fairview 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. The pipeline operator will develop a Pipeline Integrity Management Plan 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 Project.

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, whose experience will include implementing emergency response protocols for releases impacting rivers, such as the Yellowstone River. In addition, consistent with federal regulations, NST Express is preparing an Emergency Response Plan, 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

### **Project Alternatives**

#### No Action

Under No Action, the proposed Project would not be constructed. Without the Project, crude oil would not be gathered at the Alexander Facility or transported to the existing NST Transload East Fairview Facility for delivery via rail to markets throughout the United States. As such, the purpose and need of the Project, which is to provide Bakken producers with a safe, reliable means of delivering crude oil to an existing rail loading facility with access to a variety of U.S. markets, would not be fulfilled. For these reasons, No Action is not an alternative to the Project.

#### Other Pipelines

No existing or planned pipeline projects provide a crude oil truck offloading and pipeline interconnection hub near Alexander, with a pipeline connection extending to the existing NST Transload East Fairview Facility. As such, no other pipelines meet the purpose and need of this Project.

#### Trucking

Crude oil could be transported to the NST Transload East Fairview Facility by commercial trucks. 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% in North Dakota.<sup>1</sup> Crashes involving

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<sup>1</sup> See Truck Safety Facts, North Dakota State University, Upper Great Plains Transportation Institute (Fall 2014); see also ND Traffic Safety: Oil Counties, North Dakota State University, Upper Great Plains Transportation Institute (Fall 2013) (noting that “severe injury truck crashes in the oil region increased by more than 1200% from 2008 to 2012”).

trucks are 30% more likely to result in injury than non-truck-related crashes. The normal daily throughput of the proposed Project would be approximately 100,000 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 560 trucks per day, an average of 23.4 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. For these reasons, trucking is not an alternative to the Project.

### Rail

No rail facilities exist or are planned that would provide a means to gather and transport crude oil between the proposed location of the Alexander Facility and the existing NST Transload East Fairview 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, as well as an above-ground crossing of the Yellowstone River. Thus, rail facilities would have greater permanent environmental and landowner impacts than the Project. For this reason, while the Project will facilitate crude oil transportation to an existing rail loading facility, rail, itself, is not an alternative to the Project.

### Route Alternatives

The overall objective of the Project is to safely and reliably transport crude oil gathered at the Alexander Facility to the NST Transload East Fairview Facility for loading on and transport by rail to market. Factors considered in selecting the Route include the following.

- Meeting the Project's geographic requirements (extending from the proposed Alexander Facility to the existing NST Transload East Fairview Facility).
- Complying with Commission siting criteria, including exclusion area, avoidance area, selection and policy criteria.
- Co-locating with existing infrastructure where possible.
- Avoiding and minimizing potential impacts to existing infrastructure, landowners, and environmentally sensitive areas.
- Utilizing constructability and operational efficiencies.
- Minimizing safety concerns.
- Ensuring the ability to acquire ROW from landowners.

During route development, NST Express considered two major alternatives to the Preferred Route:

- Route Alternative #1: The first alternative route began at the Alexander Facility and went in a southwesterly direction following existing pipelines, property lines, and roads; then turned southwest, crossing Highway 16 and continuing until it reached the

ROW of Highway 200; then turned west across the Yellowstone River until it reached its terminus at the NST Transload East Fairview Facility. This alternative was considered due to its proximity to other pipelines, property lines, and roads. However, the alternative was ultimately rejected because of potential impacts to cultural and natural resources along the eastern side of the Yellowstone River, inadequate workspace for HDD at the Yellowstone River, and failure to intersect a potential interconnection point.

- Route Alternative #2: The second alternative route followed the same path as the first route until it reached the junction of Highway 16 and Route 7, at which point it followed the ROW of Route 7 until turning west to cross the Yellowstone River. Once across the river the alternative followed existing pipelines, property lines, and roads until reaching its terminus at the NST Transload East Fairview Facility. This alternative was also considered due to its proximity to other pipelines, property lines, and roads. However, the alternative was ultimately rejected due to inadequate workspace for HDD at the Yellowstone River, inadequate ROW along Route 7, and failure to intersect a potential interconnection point.

In addition to the major route alternatives noted above, NST Express also considered a number of route deviations proposed by landowners or in consultations with agencies and the owners of existing energy infrastructure. Route deviations were typically incorporated into the Project's proposed route, unless they impacted other landowners who were not amenable to the change or resulted in unacceptable impacts to existing features.

The Route best meets the factors set forth above. In addition, landowners along the proposed Route have provided initial approval of the Route, and granted permission to conduct surveys for the Project within the Corridor.

## **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 Cultural Resource Study Area was conducted on November 25, 2014. Results of the background search identified 20 previously recorded cultural resources located in the Cultural Resource Study Area, including 17 sites and 3 isolated finds. Three cultural resources within the Cultural Resource Study Area have been recommended eligible for the National Register of Historic Places (NRHP), while seven remain unevaluated and 10 have been determined not eligible for nomination. Two of the previously recorded cultural resources were located within the Corridor.

The ensuing Class III cultural resource inventory of the Corridor was conducted on January 30; March 15, 16, 17, and 20; and May 1, 2015. During the inventory, a 200-foot-wide corridor centered on the proposed centerline, its reroutes, and facility locations at the east and west ends of the alignment were surveyed, totaling 798.71 acres. SWCA Environmental Consultants (SWCA) revisited two previously recorded cultural resources and newly recorded two sites and one site lead. Both previously recorded resources are historic sites that have been previously recommended eligible for the NRHP. Both of the newly recorded sites have

been recommended not eligible for the NRHP, while the site lead remains unevaluated pending a full recording.

SWCA recommended that the North Dakota State Historic Preservation Office (SHPO) issue a finding of no significant sites affected for the Project based on information in the cultural resources report submitted May 12, 2015. The SHPO concurred with a “No Significant Sites Affected” determination and responded in a letter dated May 21, 2015.

## **14.2 Wetland and Waterbody Inventory**

Prior to conducting surveys, SWCA reviewed National Wetlands Inventory data and National Hydrography Data to determine the location and extent of mapped wetlands and waterbodies within the Study Area. The desktop analysis confirmed 232 streams and 214 wetlands within the Study Area.

Field studies were completed of the Corridor and Route (200-foot-wide corridor centered on the proposed centerline, its reroutes, and facility locations at the east and west ends of the alignment) on January 30; March 15, 17, and 20; and May 1, 2015, to confirm presence and/or absence of wetlands and waterbodies.

Seven wetlands were identified and recorded during the field studies. All seven wetlands were identified as likely USACE jurisdictional wetlands. Please refer to Section 11.2, Special Construction Techniques, for a discussion of the proposed crossing technique for these areas. The Natural Resource Report provided in Appendix D contains additional information on these features and mapped locations.

Five streams and no waterbodies were identified and recorded during the field studies. All five streams were determined to be likely USACE jurisdictional. Four of the five streams are associated with the Lower Yellowstone Irrigation District canal system. Please refer to Section 11.2, Special Construction Techniques, for the proposed crossing techniques for these areas. The Natural Resource Report provided in Appendix D contains additional information on these features and mapped locations.

The Project will cross the Yellowstone River. Please refer to Section 11.2, Special Construction Techniques, for the crossing technique of this area. The Natural Resource Report provided in Appendix D contains additional information on these features and mapped locations.

## **14.3 Habitat Assessment**

### **14.3.1 Tree/Sapling/Shrub Inventory**

SWCA used aerial imagery and LANDFIRE (LANDFIRE 2013) to analyze the Study Area for woody vegetation. Approximately 3.5% of the Study Area contains woody vegetation areas.

Field studies were completed of the Corridor and Route (200-foot-wide corridor centered on the proposed centerline, its reroutes, and facility locations at the east and west ends of the

alignment) on January 30; March 15, 17, and 20; and May 1, 2015, to confirm presence and/or absence of woody vegetation areas.

Nine areas of woody vegetation were identified and recorded during the field studies. In total, 165 trees were identified, 22 of which are located in the 100-foot-wide construction ROW. Refer to the Natural Resource Report, Appendix D, for additional information on these features and mapped locations.

#### 14.3.2 Federally Protected Species

In McKenzie County, North Dakota, nine species are listed under the Endangered Species Act: black-footed ferret (*Mustela nigripes*) (Endangered [E]), gray wolf (*Canis lupus*) (E), whooping crane (*Grus americana*) (E), piping plover (*Charadrius melodus*) (Threatened [T]) and its designated critical habitat, interior least tern (*Sterna antillarum*) (E), pallid sturgeon (*Scaphirhynchus albus*) (E), Dakota skipper (*Hesperia dacotae*) (T), rufa red knot (*Calidris canutus*) (T), and the northern long-eared bat (*Myotis septentrionalis*) (T). Refer to the Natural Resource Report, Appendix D, for additional information on these species.

##### Black-footed Ferret

Black-footed ferrets have been largely extirpated from the wild primarily because of the rangewide decimation of the prairie dog. The *Black-footed Ferret Survey Guidelines for Compliance with the Endangered Species Act* (U.S. Fish and Wildlife Service [USFWS] 1989) states that ferrets require black-tailed prairie dog (*Cynomys ludovicianus*) towns or complexes greater than 80 acres, and towns of this dimension may be important for ferret recovery efforts (USFWS 1988). It is possible the Study Area contains complexes greater than 80 acres, and may contain suitable habitat for the black-footed ferret.

Field surveys conclude that prairie dog complexes of 80 acres are not within the Corridor or crossed by the Route.

The black-footed ferret is not expected to be impacted by the proposed Project.

##### Gray Wolf

The gray wolf uses a variety of habitat including forests and grasslands. The corridor contains large tracts of agriculture, some grasslands, and little wooded areas. The corridor generally lacks suitable habitat and the closest known pack of wolves, a Minnesota population, is approximately 17 miles (28 kilometers) from the northeast corner of North Dakota.

Field surveys conclude a lack of suitable habitat for the gray wolf in the Corridor and along the Route.

The re-establishment of gray wolf populations in North Dakota is unlikely. The gray wolf is not expected to be impacted by the proposed Project.

##### Whooping Crane

The Corridor is within the migratory corridor for the whooping crane, with the nearest sighting being 432 feet from the central portion of the pipeline corridor east of Fairview

(USFWS 2010). Cranes may occasionally pass through the area; however, these individuals or small groups would be expected to visit the area for only a few days before continuing their migration.

Field surveys conclude suitable whooping crane foraging habitat (i.e., cultivated cropland) is present in the Corridor and Route. The whooping crane is not expected to be impacted by the proposed Project if standard construction practices associated with this species are followed. The summary of these practices are provided in Appendix D.

#### Piping Plover

Plovers in the Great Plains make their nests on open, sparsely vegetated sand or gravel beaches adjacent to alkali wetlands, and on beaches, sand bars, and dredged material islands of major river systems. Designated critical habitat for piping plovers consists of all of the Lake Sakakawea shoreline, and bars where the primary constituent elements occur, as well as certain alkali lakes. Desktop analysis confirms that critical habitat for the piping plover is not within the Corridor or crossed by the Route. However, plovers likely use the Yellowstone River and its tributaries within the Corridor. Field surveys conclude that suitable piping plover habitat occurs in the Corridor and along the Route at the Yellowstone River crossing area.

The piping plover is not expected to be impacted by the proposed Project by following the USACE conditions of approval associated with the Yellowstone River HDD permit.

#### Interior Least Tern

Least terns have distinct breeding areas. Their breeding season is from May 1 through August 31, and breeding birds require the presence of dry, exposed sandbars, with favorable river flows. Desktop analysis confirms the presence of potential habitat for terns using the Yellowstone River and its tributaries within the corridor. Field surveys conclude that suitable tern habitat occurs within the Corridor and along the Route.

The interior least tern is not expected to be impacted by the proposed Project by following the USACE conditions of approval associated with the Yellowstone River HDD permit.

#### Pallid Sturgeon

The fundamental elements of pallid sturgeon habitat are defined as the bottom of swift waters of large, turbid, free-flowing rivers with braided channels; dynamic flow patterns; flooding of terrestrial habitats; and extensive microhabitat diversity. The pallid sturgeon population occurs from the Missouri River below Fort Peck Dam to the headwaters of Lake Sakakawea and from the lower Yellowstone River up the confluence of the Tongue River, Montana. Desktop analysis confirms the presence of potential habitat for the pallid sturgeon within the Corridor.

Field surveys conclude that suitable pallid sturgeon habitat occurs in Corridor and along the Route.

Potential pollution from construction activities, hydrostatic testing, and pipeline operations is a concern for downstream populations of the pallid sturgeon. However, based on the use of the HDD, these impacts are considered to be very unlikely to occur. Activities associated with the proposed Project are not anticipated to adversely affect water quality and subsequently the pallid sturgeon. The pallid sturgeon is not expected to be impacted by the proposed Project by following the USACE conditions of approval associated with the Yellowstone River HDD permit.

#### Dakota Skipper

The Dakota skipper is a small butterfly with a 1-inch wingspan. It is found primarily in undisturbed, native tall grass and upland dry northern mixed grass prairie areas with a high diversity of wildflowers and grasses. Desktop analysis confirms the presence of potential habitat for the Dakota skipper within the Corridor. However, the nearest proposed critical habitat (Unit 12) is located 32.6 miles east-northeast from the proposed Project.

Field surveys concluded that cultivated, non-native grass prairie is dominant in the Corridor and along the Route, and therefore not suitable as Dakota skipper habitat.

The Dakota skipper is not expected to be impacted by the proposed Project.

#### Rufa Red Knot

The rufa red knot breeds in the Canadian Arctic and migrates 19,000 miles to winter on the U.S. Gulf Coast and in South America. The species generally occurs along the ocean coasts during migration, but a small number have been reported across the interior United States. Desktop analysis confirms suitable habitat along Lake Sakakawea is approximately 6 miles north of the Route, and it is possible the rufa red knot may use the Yellowstone River within the Project Corridor.

Field surveys conclude that potential suitable habitat for the rufa red knot may occur along the Yellowstone River.

The likelihood of the rufa red knot occurring in the Corridor or along the Route is low, as only a small number have been reported across the interior United States. The rufa red knot is not expected to be impacted by the proposed Project by following the USACE conditions of approval associated with the Yellowstone River HDD permit.

#### Northern Long-eared Bat

Northern long-eared bats are not known to occur in the Study Area, and no known hibernacula are in North Dakota because there are either no suitable hibernacula present or because the area has not been surveyed for them (USFWS 2013).

Field surveys conclude that suitable winter habitat for the northern long-eared bat does not occur within the Corridor or along the Route. However, nearby trees and rocky outcrops can act as suitable summer day roosts within the Corridor and along the Route. Also, given the limited amount of clearing of woody vegetation, the northern long-eared bat is not expected to be impacted by the proposed Project.

#### 14.3.3 Migratory Bird Treaty Act

Suitable habitat for migratory birds exists in the Corridor and field surveys conclude the presence of suitable habitat along the Route. Specifically, grassland nesting birds have the potential to occur and nest in the Corridor, especially during the migratory bird breeding season between February 1 and July 15. Suitable woodland nesting habitat occurs in the route, but it is minimal. To minimize or reduce potential impacts of the proposed Project on migratory birds NST Express would utilize standard construction practices associated with migratory birds. The summary of these practices are provided in Appendix D. Migratory birds are not expected to be impacted by the proposed Project.

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

Bald eagle nesting habitat is typically any mature stands of conifer (*Pinophyta* species) or cottonwood (*Populus* sp.) trees in association with rivers, streams, reservoirs, lakes, or any significant body of water. Desktop analysis confirms potential bald eagle habitat in the Corridor. The nearest known eagle nest is approximately 3 miles northwest of the closest portion of the proposed Project (North Dakota Game and Fish Department [NDGF] 2015).

Field surveys conclude that suitable bald eagle habitat occurs in the Corridor and along the route, especially along the Yellowstone River. One bald eagle was observed during the field surveys; however, no nests were observed during the field surveys.

The golden eagle prefers habitat characterized by open prairie, plains, and forested areas. Usually, golden eagles can be found close to badland cliffs, which provide suitable nesting habitat. Desktop analysis confirms potential golden eagle habitat in the Corridor.

Field surveys conclude that suitable golden eagle habitat occurs in the Corridor and along the Route, especially along the Yellowstone River. No golden eagles or nests were observed during the field surveys.

Bald eagles and golden eagles are not expected to be impacted by the proposed Project.

Refer to the Natural Resource Report, Appendix D, for additional information on these species.

## 15.0 Consultation

SWCA, on behalf of NST Express, provided consultation letters, emails, phone calls, and additional requests for data to the following agencies: U.S. Fish and Wildlife Service; U.S. Army Corps of Engineers; U.S. Department of Interior, Bureau of Reclamation; U.S. National Park Services; U.S. Department of Agriculture, Natural Resources Conservation Service; U.S. Department of Defense; North Dakota Game and Fish Department; North Dakota Parks and Recreation Department; North Dakota State Historic Preservation Office; North Dakota Department of Health; North Dakota Department of Agriculture; North Dakota State Water Commission; North Dakota Department of Trust Lands; North Dakota State Soil Conservation Committee; County Water Resource Board; and North Dakota County Weed Control Board.

Consultation letters were submitted on March 26, 2015, and included the proposed alignment. A revised consultation letter was submitted on May 6, 2015, to include the proposed facilities (NST Express Alexander Facility and expansion of NST Transload East Fairview Facility) and to correct the entity name (NST Express, LLC). The U.S. Fish and Wildlife consultation letter was submitted on May 7, 2015.

### **15.1 U.S. Fish and Wildlife Service**

SWCA, on behalf of NST Express, submitted an email request for information on USFWS easement data in the NST Express 2.3-mile corridor on March 23, 2015. On March 26, 2015, the USFWS responded there are no existing USFWS easements or fee-title lands within the NST Express 2.3-mile corridor.

SWCA, on behalf of NST Express, submitted a Project consultation letter to the USFWS on May 7, 2015, providing an opportunity to comment on threatened and endangered species, migratory birds, bald and golden eagles, and USFWS easements. To date, no comment has been received from the USFWS. Refer to Appendix E, Agency Correspondence/Consultation, for additional details.

### **15.2 U.S. Army Corps of Engineers**

SWCA, on behalf of NST Express, submitted a Project consultation letter to the USACE on March 27, 2015, and a revised consultation letter on May 6, 2015, providing an opportunity to comment. On March 30, 2015, SWCA received a letter from the USACE on the project discussing preliminary information.

On May 11, 2015, SWCA received a letter from the USACE. The USACE details a Department of the Army permit would be required for portions of the proposed Route. NST Express proposes to complete the proposed Project under requirements in the USACE Nationwide Permit 12. NST Express will submit a Section 10 permit application to directionally bore beneath the Yellowstone River, by HDD. Refer to Appendix E, Agency Correspondence/Consultation, for additional information.

### **15.3 U.S. Department of Interior, Bureau of Reclamation**

SWCA, on behalf of NST Express, submitted a Project consultation letter to the BOR, Dakota Areas Office, on March 27, 2015, providing opportunity to comment. A revised consultation letter was submitted to the BOR, Montana Area Office, on May 6, 2015, providing opportunity to comment.

The BOR, Dakota Area Office, responded to SWCA with an email on March 31, 2015, advising that the Lower Yellowstone Irrigation District relationship is through the Montana Area Office, forwarded the consultation letter (dated March 27, 2015) to the Montana Area Office, and provided contact information for the Montana Area Office officials.

The Montana Area Office responded to SWCA on April 1, 2015, requiring additional details of the proposed NST Project. Due to limited available details at that time, the BOR, Montana Area Office, comment was “This proposed pipeline project appears to cross Reclamation

irrigation facilities located in Township 151 North, Range 104 West. Any irrigation facility crossing by the proposed pipeline will need to follow Reclamations crossing guidelines and will need prior approval by Reclamation.”

Contract Land Staff, LLC (CLS), on behalf of NST Express initiated contact with the Lower Yellowstone Irrigation District (LYID) personnel in April 2015. Personnel with the LYID requested a map of the proposed pipeline and a field visit with CLS personnel. A field visit of the proposed canal crossings of the LYID was completed with CLS and LYID personnel on April 24, 2015. NST Express representatives met with LYID in April and May. The result was that crossing depths would be 13 feet on drainages, 8 feet on laterals, and 5 feet on farm laterals.

CLS received a land use authorization form, to be completed, and crossing guidelines from the BOR, from BOR personnel on May 6, 2015.

NST Express will obtain all necessary permits and approvals from the BOR for the crossings, and will continue to coordinate with the BOR as needed throughout Project construction and operation.

#### **15.4 U.S. National Park Service**

SWCA, on behalf of NST Express, submitted a Project consultation letter to the U.S. National Park Service, on March 27, 2015, and a revised consultation letter on May 6, 2015, providing opportunity to comment.

On May 15, 2015, SWCA received an email from the National Park Service requesting a shapefile of the proposed NST Project. SWCA submitted an email reply to the National Park Service delivering the requested shapefiles. Refer to Appendix E, Agency Correspondence/Consultation, for additional information.

#### **15.5 U.S. Department of Agriculture, Natural Resources Conservation Service**

On March 23, 2015, an email correspondence was submitted to the U.S. Department of Agriculture, Natural Resources Conservation Service, by SWCA, on behalf of NST Express, to confirm existence of Grassland Reserve Program easements, Wetland Reserve Program easements, prime farmland, and farmland of statewide importance.

The Natural Resources Conservation Service responded on March 23, 2015, that no easements under their jurisdiction will be impacted. Please see Appendix E, Agency Correspondence/Consultation, for additional information.

#### **15.6 U.S. Department of Defense**

SWCA, on behalf of NST Express, submitted a Project consultation letter to the U.S. Department of Defense on March 27, 2015, and a revised consultation letter on May 6, 2015, providing opportunity to comment and requesting assessment of the area for the presence of any Intercontinental Ballistic Missile related systems.

On April 6, 2015, SWCA received an email from the U.S. Department of Defense that the Minot Air Force Base has no assets near McKenzie County and will have no impact on the proposed Project.

To date, no additional comment has been received from the U.S. Department of Defense regarding the May 7, 2015, consultation letter. Since the Project remains located entirely in McKenzie County, no additional correspondence is anticipated. Refer to Appendix E, Agency Correspondence/Consultation, for additional information.

### **15.7 North Dakota Game and Fish Department**

SWCA, on behalf of NST Express, submitted a Project consultation letter to the NDGF on March 27, 2015, and a revised consultation letter on May 6, 2015, providing opportunity to comment and requesting assessment of the 2.3-mile corridor for presence or absence of State Conservation Priority Species and NDGF PLOTS Lands.

On April 23, 2015, SWCA received a letter from the NDGF. The NDGF discusses the following.

- Requests work within native prairie and wooded draws be avoided and disturbed areas be reclaimed to pre-project conditions.
- Recommends the Yellowstone River, a Class I fishery, be crossed by direction boring. If this method is not feasible, construction should not take place within the waterway between April 15 and June 1, and to implement controls to minimize erosion and sedimentation. Precautions should be taken to prevent leaks or spills from entering the river.
- Requests the Aquatic Nuisance Species (ANS) Coordinator be contacted for equipment inspections or additional information regarding ANS prevention protocols.
- Requests the protection of wetlands that cannot be avoided by the proposed project, no alterations of existing drainage patterns, and no placement of above-ground appurtenances within wetland areas.
- Recommends aerial surveys for raptor nests prior to construction and a 0.5-mile construction buffer be implemented around active eagle nest sites.

With the recommendations above, implemented where appropriate, the NDGF does not believe the Project will have a significant adverse effect on wildlife or wildlife habitat, including species of conservation priority. NST Express through HDD drilling the Yellowstone, siting the Route, and conducting standard construction practices for wetlands will address the issues identified above.

On May 18, 2015, SWCA called and left a message with the ANS Coordinator regarding ANS protocols. To date, no response has been received.

On May 18, 2015, SWCA called and left a message with the Conservation Biologist regarding golden eagle nest locations. To date, no response has been received.

On May 26, 2015, SWCA received an email response from the NDGF that the May 6, 2015 letter has been reviewed and the NDGF has nothing additional to offer and the original comments are still applicable.

Please see Appendix E for Agency Correspondence/Consultation.

### **15.8 North Dakota Parks and Recreation Department**

SWCA, on behalf of NST Express, submitted a Project consultation letter to the NDPRD on March 27, 2015, and a revised consultation letter on May 6, 2015, providing opportunity to comment and requesting assessment of the 2.3-mile corridor for environmental issues relevant to the North Dakota Public Service Commission's siting requirements, State Park Lands, Land and Water Conservation Fund, and the Natural Heritage Inventory.

On April 20, 2015, SWCA received a letter from the NDPRD. The NDPRD recommends that the Project be accomplished with minimal impacts and all efforts be made to ensure that critical habitats are not disturbed in the project area to help secure rare species conservation in North Dakota. Additionally, the NDPRD recommends any impacted areas be revegetated with species native to the project area. The NDPRD indicated six occurrence of rare animal and plant species within the project area including the blue sucker (*Cycleptus elongates*), sturgeon chub (*Macrhybopsis gelida*), sicklefin chub (*Macrhybopsis meeki*), flathead chub (*Platygobio gracilis*), and pallid sturgeon. The occurrence of the species are in the Yellowstone River, to avoid potential impacts to these species, NST Express will cross the Yellowstone River using a HDD.

To date, no additional comment has been received from the NDPRD regarding the May 7, 2015, consultation letter. Please see Appendix E for Agency Correspondence/Consultation.

### **15.9 North Dakota State Historic Preservation Office**

The North Dakota SHPO is responsible for managing the historic and archaeological resources of the state; as such, the SHPO maintains records of all previously recorded cultural resources within the state. The information below is an overview of a combined Class I literature review of SHPO records and a Class III cultural resource inventory conducted for the Project.

As part of the initial phase of this investigation, SWCA conducted a Class I background search of archaeological and historical literature and records for the Cultural Resource Study Area on November 25, 2014. Researchers searched relevant records holdings at the North Dakota State Historical Society for information regarding previously recorded historic and prehistoric sites located within the project area.

Results of the background search identified 20 previously recorded cultural resources located in the Cultural Resource Study Area, including 17 sites and 3 isolated finds. Three cultural resources within the Cultural Resource Study Area have been recommended eligible for the NRHP, while seven remain unevaluated and 10 have been determined not eligible for nomination. Two of the previously recorded cultural resources were located within the Corridor.

The ensuing Class III cultural resource inventory of the Corridor was conducted on January 30; March 15, 16, 17, and 20; and May 1, 2015. During the inventory, SWCA revisited two previously recorded cultural resources and newly recorded two sites and one site lead. Both previously recorded resources are historic sites that have been previously recommended eligible for the NRHP. Both of the newly recorded sites have been recommended not eligible for the NRHP, while the site lead remains unevaluated pending a full recording.

The Project Route avoids the unevaluated resource and the construction ROW will be reduced to avoid impacts during construction. Both NRHP-eligible sites will be avoided by boring under the features. Applying these measures, SWCA recommended that SHPO issue a finding of no significant sites affected for the Project.

On May 12, 2015, the cultural resource report was submitted to the SHPO. The SHPO concurred with a “No Significant Sites Affected” determination and responded in a letter dated May 21, 2015.

Refer to Appendix E for related agency consultations, and Appendix F for the cultural resource survey report abstract.

#### **15.10 North Dakota Department of Health**

SWCA, on behalf of NST Express, submitted a Project consultation letter to the North Dakota Department of Health on March 27, 2015, and a revised consultation letter on May 6, 2015, providing opportunity to comment.

To date, no comment has been received from the North Dakota Department of Health. Please see Appendix E for Agency Correspondence/Consultation.

#### **15.11 North Dakota Department of Agriculture**

SWCA, on behalf of NST Express, submitted a Project consultation letter to the North Dakota Department of Agriculture on March 27, 2015, and a revised consultation letter on May 6, 2015, providing opportunity to comment.

To date, no comment has been received from the North Dakota Department of Agriculture. Please see Appendix E for Agency Correspondence/Consultation.

#### **15.12 North Dakota State Water Commission**

SWCA, on behalf of NST Express, submitted a Project consultation letter to the NDSWC on March 27, 2015, and a revised consultation letter on May 6, 2015, providing opportunity to comment.

On April 2, 2015, SWCA received a telephone call from NDSWC personnel regarding a request for additional information that included a zoomed-in map of the Alexander area in relation to the alignment for floodplain review. Additionally, the NDSWC personnel requested that if any work is to be completed in Montana, that SWCA discuss the proposed Project with Montana state officials.

On April 17, 2015, SWCA received a letter from the NDSWC. The NDSWC provided the following comments.

- A sovereign lands permit will be needed for this Project from the State Engineer's Office.
- A determination regarding floodplains could not be made as not enough detail was included in the information provided.
- Contact the Water Appropriations Division of the Commission if gauging stations or water wells may be affected by the Project or accidentally damaged.
- Please contact Western Area Water Supply Authority regarding Project infrastructure located in the project area.
- Ensure local, state, and federal agencies are contacted for any required approvals, permits, and easements.
- All waste material must be disposed of properly and not placed in identified floodway areas.
- No sole-source aquifers have been designated in North Dakota.

SWCA, on behalf of NST Express, will complete a Sovereign Lands Permit.

On May 11, 2015, SWCA sent the requested map to the NDSWC personnel for floodplain identification.

On May 14, 2015, SWCA received a letter from the NDSWC. The NDSWC determined there are no floodplains identified and/or mapped where the project is to take place. No floodplain permit is necessary from the Fort Berthold Indian Reservation relative to the National Flood Insurance Program. Additionally, the comments provided in the letter dated April 17, 2015, still pertain to the project.

On May 21, 2015 SWCA called and left a message with Western Area Water Supply Authority. Personnel at Western Area Water Supply Authority are making a determination for the Yellowstone River as a water source for rural water districts.

Please see Appendix E for Agency Correspondence/Consultation.

### **15.13 North Dakota Department of Trust Lands**

SWCA, on behalf of NST Express, submitted a Project consultation letter to the NDDTL, Minerals Management and Surface Management Divisions, on March 27, 2015, and a revised consultation letter on May 6, 2015, providing opportunity to comment.

SWCA received an email response from the NDDTL on April 7, 2015, requesting a geographic information system (GIS) layer of the proposed pipeline route. SWCA submitted a GIS shapefile of the proposed pipeline route and facilities on May 12, 2015, to NDDTL personnel. The NDDTL personnel responded on May 12, 2015, that the data provided fairly

represents the approximate location of the pipeline route and proximity of minerals interests managed by the office, for use in filing with the Commission in the state of North Dakota.

To date, no comment has been received from the NDDTL, Surface Management Division. Please see Appendix E for Agency Correspondence/Consultation.

#### **15.14 North Dakota State Soil Conservation Committee**

SWCA, on behalf of NST Express, submitted a Project consultation letter to the North Dakota State Soil Conservation Committee, on March 27, 2015, and a revised consultation letter on May 6, 2015, providing opportunity to comment.

To date, no comment has been received from the North Dakota State Soil Conservation Committee. Please see Appendix E for Agency Correspondence/Consultation.

#### **15.15 County Water Resource Boards**

SWCA, on behalf of NST Express, submitted a Project consultation letter to the McKenzie County Water Resource District on March 27, 2015, and a revised consultation letter on May 6, 2015, providing opportunity to comment.

To date, no comment has been received from the McKenzie County Water Resource Board. Please see Appendix E for Agency Correspondence/Consultation.

#### **15.16 North Dakota County Weed Control Board**

SWCA, on behalf of NST Express, submitted a Project consultation letter to the Weed Control Officer, McKenzie County, on March 27, 2015, and a revised consultation letter on May 6, 2015, providing opportunity to comment.

SWCA received a comment on April 7, 2015, from the McKenzie County Weed Control Officer, requesting additional information for the Weed Management Plan. SWCA, on behalf of NST Express, is currently compiling the additional information to submit to the McKenzie County Weed Control Officer.

To date, no additional response has been received from the Weed Control Officer, McKenzie County, regarding the May 7, 2015, consultation letter. Please see Appendix E for Agency Correspondence/Consultation.

## **16.0 Siting Criteria**

### **16.1 Exclusion Areas**

Per N.D.A.C. § 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.

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 Project Corridor or Route.

A Class I background search of archaeological and historical literature and records for the project area and surrounding 1-mile radius was conducted on November 25, 2014. Results of the background search identified 20 previously recorded cultural resources located in the 1-mile study area surrounding the project area, including 17 sites and 3 isolated finds. Three cultural resources within the project area have been recommended eligible for the NRHP, while seven remain unevaluated. The ensuing Class III cultural resource inventory of the project area was conducted on January 30; March 15, 16, 17, and 20; and May 1, 2015. During the inventory, SWCA revisited two previously recorded cultural resources. Both previously recorded resources are historic sites that have been previously recommended eligible for the NRHP. SWCA recommended that SHPO issue a finding of no significant sites affected for the Project based on information in the cultural resources report submitted May 12, 2015. The SHPO concurred with a “No Significant Sites Affected” determination and responded in a letter dated May 21, 2015.

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

No designated or registered state parks, historic sites, monuments, historical markers, or nature preserves would be crossed by the Project Corridor or Route.

A Class I background search of archaeological and historical literature and records for the project area and surrounding 1-mile radius was conducted on November 25, 2014. Results of the background search identified 20 previously recorded cultural resources located in the 1-mile study area surrounding the project area, including 17 sites and 3 isolated finds. Ten sites have been determined not eligible for nomination on the NRHP. The ensuing Class III cultural resource inventory of the project area was conducted on January 30; March 15, 16, 17, and 20; and May 1, 2015. During the inventory, SWCA newly recorded two sites and one site lead. SWCA recommended that SHPO issue a finding of no significant sites affected for the Project based on information in the cultural resources report submitted May 12, 2015. The SHPO concurred with a “No Significant Sites Affected” determination and responded in a letter dated May 21, 2015.

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 proposed Project Corridor or Route.

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

Pallid sturgeon (endangered) occurs in the Yellowstone River. Additionally, the interior least tern (endangered) and piping plover (threatened) may use the shorelines of the Yellowstone River. NST Express proposes to use HDD for the river crossing, and therefore no adverse impact is anticipated.

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

No areas where animal or plant species 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

On April 6, 2015, SWCA received an email from the U.S. Department of Defense that the Minot Air Force Base has no assets near McKenzie County and will have no impact on the proposed Project. To date, no additional comment has been received from the U.S. Department of Defense. Please see Appendix E for Agency Correspondence/Consultation.

The proposed Project Corridor and Route are not located within 1,200 feet of the geographic center of an intercontinental ballistic missile 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

On April 6, 2015, SWCA received an email from the U.S. Department of Defense that the Minot Air Force Base has no assets near McKenzie County and will have no impact on the proposed Project. To date, no additional comment has been received from the U.S. Department of Defense. Please see Appendix E for Agency Correspondence/Consultation.

The proposed Project Corridor and Route are not located within 30 feet on either side of a direct line between intercontinental ballistic missile launch or launch control facility.

**16.2 Avoidance Areas**

Per N.D.A.C. § 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.

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 proposed Project 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 proposed Project Corridor or crossed by the Route.

16.2.3 Historical Resources Not Specifically Designated as Exclusion or Avoidance Areas

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

16.2.4 Areas Which are Geologically Unstable

The proposed Project Route would not cross any areas of geologically unstable terrain. Landslide-prone areas are scattered throughout the Study Area and the bluff on the east bank of the Yellowstone River. The Project avoids the scattered areas and the HDD adequately addresses any potential for landside issues associated with the bluff on the east bank of the Yellowstone River.

Seismic hazards are associated with faults, seismicity, and ground motion. Faults are dislocations whereby blocks of material on opposite sides of the fault move past each other, causing energy to be released resulting in an earthquake. Seismicity is related to the intensity, frequency, and location of earthquakes in a given area. From 1990 to 2006, almost no seismic events have been recorded in North Dakota (U.S. Geological Survey 2006). Ground motion hazards are the result of energy from an earthquake propagating through the ground. The proposed Project corridor and route would not traverse areas with the potential of seismic hazards.

Subsidence is typically associated with underground mining where underground voids collapse creating sinkhole-type subsidence, fissures, and unstable ground. There are no mining activities or abandoned mines within the proposed Project Corridor; therefore, Project development would not be affected by subsidence-prone terrain.

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

Aerial imagery was used to determine locations of structures within the Corridor and Route. Approximately 43 structures occur within the Study Area. No residences, schools or businesses are located within 500 feet of the Project.

16.2.6 Reservoirs and Municipal Water Supplies

The Yellowstone River provides water for nearby communities. The Project would cross beneath the Yellowstone River using a HDD to avoid impacts to the river.

Sixty-two wells were identified in the Study Area, mainly used for domestic, local, and irrigation purposes. No wells were identified within the Corridor or Route.

16.2.7 Water Sources for Organized Rural Water Districts

SWCA has utilized public information and made inquiries to the North Dakota Rural Water Association as to the use of the Yellowstone River as a source. Information from the agency indicates that the river is not used as a 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 proposed Project Corridor or Route.

**16.3 Selection Criteria – Impact On:**

16.3.1 Agricultural Production

Agricultural land use comprises approximately 55% of the Study Area (LANDFIRE 2013).

The Project would temporarily impact approximately 317 acres. Approximately 133 acres are considered prime farmland and/or farmland of statewide importance (Table 2). Dominant crops in the Study Area consist of wheat (*Triticum aestivum*), sugar beets (*Beta vulgaris*), canola (*Brassica napus*), and soybeans (*Glycine max*).

**Table 2. Farmland in Study Area**

Type of Farmland	Acres in Study Area	Percent of Total Area in Corridor	Acres in Route	Percent of Total Area in Route
Prime Farmland	109.45	0.32	1.41	0.44
Farmland of Statewide Importance	13,581.22	39.2	132.00	41.61
Not Prime Farmland	20,513.93	59.22	183.81	57.94
Prime Farmland if Irrigated	434.76	1.26	0.00	0.00
Total	34,639.36	100.00	317.21	100.00

Once construction is complete, the 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.

16.3.2 Family Farms and Ranches

There are 43 family farms and ranches located within the Study Area. Thirteen 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 Environmental Mitigation Plan (Appendix C).

Herbaceous rangeland suitable for livestock grazing comprises approximately 35% of the Study Area (LANDFIRE 2013). The primary impact on family ranches would be temporary prohibition of livestock grazing in the construction ROW, workspace areas, and restrictions on livestock movement across the construction ROW and workspace areas during construction. The ROW is narrow and linear and aligned along property boundaries; therefore, impacts to livestock grazing and livestock movement restrictions would be minor.

No long-term or permanent impacts are expected to family farms and ranches. NST Express has acquired land to build and operate the NST Express Alexander Facility, and this respective acreage would be taken out of production. Post-construction restoration would return the ROW to pre-construction contours, and farming and ranching operations would continue over the operational ROW. NST Express will acquire and compensate landowners for easements for the Project.

### 16.3.3 Land Economically Suitable for Irrigation

The Lower Yellowstone Irrigation District is crossed by the Project in 12 locations. Based on consultations with the BOR and Superintendent of the Lower Yellowstone Irrigation District, NST Express has identified the specific depth of cover requirements for each crossing and plans to use trenchless construction methods (HDD or bore) for each crossing.

### 16.3.4 Surface Drainage Patterns and Groundwater Flow Patterns

#### **Surface Drainage**

Surface drainage patterns will not be altered by construction of the pipeline. Streams, 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.

The Study Area is underlain by the Yellowstone-Missouri Aquifer, a thick blanket of glacial material deposited in the valleys of the Yellowstone and Missouri Rivers. The water in the aquifer system is suitable for irrigation use.

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

#### 16.3.5 Sound Sensitive Land Uses

The proposed Project would be constructed primarily through rural areas, scattered with homesteads primarily west of the Yellowstone River. 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 and farm equipment on a seasonal basis. 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 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 and not be acceptable. 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 low. The landscape is dominated by agricultural areas and non-native grassland species. Badlands areas are exposed at the Yellowstone River crossings. Very limited recreational activities occur on this portion of the river. 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 NST Transload East Fairview Facility would be minimal. The landscape at both facility sites has been previously modified with existing infrastructure.

#### 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). Portions of an aggregate quarry are within the Study Area in the western portion of the project area located in Montana, and impacts are not expected.

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 (U.S. Energy Information Administration 2014). Technological advances have contributed to the Bakken Formation's increased production in recent years. As of May 2014, North Dakota exceeded 1 million barrels per day, approximately 12% of the U.S. crude oil produced by May 2014. Natural gas also is 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, there are approximately 154 total wells within the Study Area; 82 of these wells are active, 5 are currently in drilling operations, 8 wells are shut-in or inactive, and the remaining 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 infrastructures, NST Express performed a centerline survey of the route, and based on that survey, NST Express identified all third-party entities/utilities encountered (e.g., petroleum, water, electric). NST Express then contacted each entity to obtain its respective crossing and encroachment guidelines and requirements. NST Express has incorporated these requirements into the Project design and will work closely with each entity during Project construction and operation to 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, National Wetlands Inventory data, and LANDFIRE dataset to determine the presence of wetlands, woodlands, and wooded areas. The desktop review confirmed the presence of these areas in the Study Area. Field surveys completed January 30; March 15, 16, 17, and 20; and May 1, 2015, confirmed the presence of these areas within the route. Please refer to Sections 14.2 and 14.3 for further discussion on the desktop analysis and field surveys of these resources.

#### 16.3.9 Radio and Television Reception and Other Communication or Electronic Facilities

One communication tower is 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 and television reception and/or other communications and electronic facilities.

#### 16.3.10 Human Health and Safety

Construction of the proposed Project would generate possible elevated risks to public safety from increased traffic (e.g. water trucks, heavy equipment). The increase in truck traffic would be temporary during construction. To additionally minimize risks to local citizens associated with increased traffic, workers housed in temporary accommodations would carpool to the work site ROW using vans and/or buses. The Project would reduce the amount of tanker truck traffic during operations as the pipeline would replace approximately 560 trucks per day from area roadways.

The transmission of oil by pipeline involves some risk to the public in the event of an accident and the release of oil. A spill 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 system 24 hours a day, as well as by routine aerial patrols. The 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.

To address potential impacts during operation, an Emergency Response Plan would be developed, in conjunction with local authorities and first responders, to build site-specific response plans, detail emergency equipment availability and location, and 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 Emergency Response Plan, a Pipeline Integrity Management Plan would 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 utilize tie into existing facilities, and minimize landowner and environmental impacts. The location of the proposed Route also allows NST Express to reach a potential interconnection point.

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

### **16.4.2 Training and Use of In-State Labor**

NST Express will use local, in-state labor to the extent practicable; however, construction of the pipeline and facilities requires employment of specialized skilled labor (e.g. 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 300 workers and upwards to 400 workers during peak construction.

### **16.4.3 Economies of Construction and Operation**

As discussed in Sections 13.0 and 17.7, the Project will provide direct and indirect economic benefits to North Dakota. Once the Project is constructed and online, NST Express expects annual maintenance and operation costs to be minimal. The Project is the most cost-effective and operationally sound means of delivering light crude oil from the NST Express Alexander Facility to the NST Transload East Fairview Facility.

### **16.4.4 Use of Citizen Coordinating Committees**

NST Express has contacted and worked closely with local officials including municipalities, county, electric utility companies, and irrigation and river authorities throughout development of the proposed Project. Initial contacts were made in November 2014. Project plans and preliminary alignment sheets and maps were provided to facilitate an exchange of information and gather concerns about the Project. The primary concerns expressed were related to crossing requirements, and NST Express engaged in numerous follow-up discussions to address these concerns by incorporating specific requirements from each entity into the Project design and construction plans. Other than one-on-one communication with landowners, no formal Citizen Coordinating Committees were used for communications and outreach to the public or jurisdictional entities.

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

The final destination of the crude oil transported by the Project will be refining markets throughout the United States, which will be accessed via interconnections with the Project or

by rail via the NST Transload East Fairview Facility. 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 each party to obtain their crossing/encroachment guidelines and requirements. These requirements have been incorporated into Project design and construction plans. NST Express will continue to work closely with these utilities to safely construct, operate, and maintain the proposed Project located within the vicinity of adjacent existing utilities.

#### 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. A contractor will be selected to oversee construction activities and ensure that all mitigation commitments, laws, regulation and standards are implemented. In addition, 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 an advance SCADA system to constantly (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 8.4 miles of the proposed alignment is adjacent to existing utilities, and approximately 8.9 miles follow road ROWs or property boundaries. In some instances, the proposed ROW does not follow property boundaries due to landowner preferences.

#### 16.4.10 Other Existing or Proposed Transmission Facilities

NST Express is exploring the potential for its Project to interconnect with producers and other transmission facilities; however, NST Express has no specific interconnection plans at this time.

As discussed in Sections 16.3.7 and 16.4.7, NST will continue to work closely with existing and planned facilities and utilities to safely construct and operate the Project and minimize the potential for impacts to existing facilities.

## **17.0 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.

### **17.1 Effects on Public Health, Welfare, Natural Resources, and the Environment**

Please see Sections 14.0, 15.0, 16.0, 18.0, and 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 discussed further in those sections, the Project is not anticipated to have any significant or long-term negative impacts on public health and welfare, natural resources, or the environment.

### **17.2 Transmission Technologies and Systems Designed to Minimize Adverse Environmental Effects**

The Project design is consistent with existing pipeline technologies. Mitigation measures have been or will be used to avoid or minimize any potential impacts to sensitive resources, including use of trenchless construction (HDD/bores) at the Yellowstone River, paved road, railroad and ditch crossings, and boring under or narrowing the construction ROW near cultural resources. 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.

### **17.3 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.

### **17.4 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 three mainline valves and pipeline markers, aboveground facilities associated with the Project would be located within the boundaries of the proposed Alexander Facility and the existing NST Transload East Fairview Facility; therefore, permanent impacts will be limited primarily to the fee-owned properties at those sites. See Sections 14.0, 15.0, 16.0, 18.0, and 19.0 for further discussion of the Project's potential direct and indirect environmental effects, as well as planned mitigation measures.

### **17.5 Corridor or Route Alternatives Developed During the Hearing that Minimize Adverse Effects**

As discussed in Section 13.0 of this Consolidated Application, NST Express analyzed alternatives during selection of its proposed Corridor and Route, and incorporated route deviations proposed by landowners and others in its Route to the extent practicable. As a result, 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.

### **17.6 Irreversible and Irretrievable Commitments of Natural Resources if Designated**

Irreversible or irretrievable commitments of natural resources include: steel for the pipeline, tanks, and ancillary facilities; gravel for improvements to access roads, if required; and petroleum products to power construction equipment, pump stations and other pipeline facilities. The Project will convert approximately 42 acres to industrial use at facility and valve sites.

### **17.7 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 gather and transport Bakken crude oil to an existing rail facility and other interconnections for transportation to markets throughout the United States, resulting in benefits to North Dakota producers and those with ties to Bakken crude oil production.

### **17.8 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 energy infrastructure owners, regarding the Project, including coordination with respect to both existing and planned developments in the vicinity of the Project. For instance, NST Express is coordinating with the road authority and BOR with respect to potential Highway 58 road expansion plans, and will modify its HDD as necessary in order to accommodate those plans. 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.

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

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

### **17.10 Effects of the Proposed Route on Areas Which are Unique Because of Biological Wealth or Rare and Endangered Species Habitats**

Habitat for the pallid sturgeon is located within the Project Corridor and crossed by the Route. Potential habitat for the interior least tern and piping plover may occur on the shoreline of the Yellowstone River, within the Project Corridor and crossed by the Route. Activities associated with the proposed Project are not anticipated to adversely affect water quality and subsequently the pallid sturgeon, interior least tern or piping plover. HDD would be used to cross the Yellowstone River. The NDPRD indicated six occurrence of rare animal and plant species within the project area including the blue sucker, sturgeon chub, sicklefin chub, flathead chub, and pallid sturgeon. The occurrence of the species are in the Yellowstone River, to avoid potential impacts to these species, NST Express will cross the Yellowstone River using a HDD. No additional 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.

### **17.11 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.

## **18.0 Other Factors Considered**

### **18.1 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, and discussed throughout, this Consolidated Application. In particular, the Project was designed to facilitate gathering and transportation of crude oil from the Alexander area to the existing NST Transload East Fairview Facility. Additionally, to cross the Yellowstone River, the crossing location had to meet certain requirements (e.g., sufficient workspace) necessary to complete a HDD.

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.

## **18.2 Economic Considerations**

In selecting the Project corridor and Preferred 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 17.7 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 facilitate the safe and efficient gathering and transportation of light sweet crude oil to the NST Transload East Fairview Facility for transportation to markets throughout the United States, which benefits North Dakota producers and, in turn, those with ties to crude oil production.

## **18.3 Present and Future Natural Resource Development**

As discussed in Section 16.1.1, there are no national parks, national memorial parks, national historic sites or landmarks, national wilderness areas, or national monuments located within the Project Corridor and Route. Similarly, there are no designated or registered state parks, sites, monuments, or nature preserves along the Project Route. There are also no county parks, recreational areas, municipal parks, or parks owned or administered by other governmental subdivisions along the Project Route.

In addition, as discussed in Section 16.2.1, there are no 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 or recreational rivers, game refuges, game management and management area, forests, forest management lands, or grasslands crossed by the Project Corridor or Route.

Moreover, as discussed in Section 15.1, the USFWS has provided comments indicating that the Project avoids all current USFWS fee-title lands easement interests.

The Project would primarily cross land used for agriculture and grazing. Once construction is complete, the ROW 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.

## **19.0 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. In addition, the Project has 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 Environmental Mitigation Plan (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 Environmental Mitigation Plan provides a detailed description of the mitigation measures that will be implemented during Project construction, including:

- 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 is also developing specific plans for the Project, including a Stormwater Pollution Prevention Plan and an HDD Contingency Plan.

Site-specific measures that NST Express will implement for crossing the Yellowstone River, which is classified as a jurisdictional waterway under Section 10 of the Rivers and Harbors Act, will be provided in the Section 10 permit from the USACE for the Project. Likewise, mitigation measures for boring irrigation canals associated with the Lower Yellowstone Irrigation Project will be applied as required in the permit issued by the Bureau of Reclamation- Montana Area Office.

## **20.0 Qualifications of Preparers**

### **Mr. Boe Gregson**

Office Director and Senior Project Manager

SWCA Environmental Consultants, 116 N 4<sup>th</sup> Street, Bismarck, North Dakota 57732

Mr. Gregson as the Office Director for the Bismarck staff and ensure that projects are completed on schedule and within budget. He has worked in the consulting industry for the past nine years with a focus on the oversight of all aspects of oil and gas field permitting/development (i.e., archaeology, wildlife, leasing, operations, survey, geographical information systems (GIS), and environmental permitting – SWPPP, Spill Prevention, Control

and Countermeasure Plan, National Pollutant Discharge Elimination System, 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.

**Ms. Peggy Roberts**

Senior Project Manager

SWCA Environmental Consultants, 2120 South College Avenue, #2, Fort Collins, Colorado 80525

Ms. Roberts is a Senior Project Manager serving in the management role on large-scale NEPA projects across several industries to comply with the NEPA. Her experience includes preparation of permit applications for electric and oil and gas transmission projects for siting authorities including the North Dakota Public Service Commission, the Nevada Utilities Commission, and the Public Utilities Commission of Texas. Ms. Roberts has project experience across the Dakotas, Colorado, New Mexico, Wyoming, Nevada, Texas, and Alaska. B.J. Journalism/Public Relations – University of Texas at Austin; M.S. Public Communications and Technology – Colorado State University; M.S. Organizational Leadership – Colorado State University.

**Ms. Mollie M. Smith**

Attorney at Law

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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 – Colorado State University, Fort Collins, CO; J.D. – University of Minnesota Law School, Minneapolis, MN.

**Ms. Lindsey Remakel**

Senior Associate

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Ms. Remakel advises and assists clients on pipeline, transmission, wind and solar permitting matters and with the acquisition and development of energy projects. Ms. Remakel also serves as environmental counsel in mergers, acquisitions and real estate transactions and assists energy and industrial clients with permitting and regulatory compliance matters under environmental and health and safety laws. B.A. Environmental Studies and Political Science – Concordia College, Moorhead, MN; M.P.A. Environmental Policy – Indiana University School of Public and Environmental Affairs, Bloomington, Indiana; J.D. – Indiana University Maurer School of Law, Bloomington, IN.

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**APPENDIX A**  
**Project Overview Maps and Engineering Drawings**

**APPENDIX B**  
**Ten-Year Plan**

**APPENDIX C**  
**Environmental Mitigation Plan**

**APPENDIX D**  
**Natural Resources Report**

**APPENDIX E**  
**Agency Correspondence/Consultation**

**APPENDIX F**  
**Cultural Resources Report**