

New Town Expansion Project

Mountrail County

Pipeline Route Application

June 2015



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INTRODUCTION

Hiland Crude, LLC (“Hiland”), submits this Route Permit Application to the North Dakota Public Service Commission (“Commission”) for the conversion of an approximately 42.5-mile-long, 8-inch existing crude oil gathering pipeline to a transmission line and proposed construction of additional above ground facilities. The pipeline is located within Mountrail County in North Dakota and is known as the New Town Extension Pipeline (the “New Town Pipeline”), which connects to Hiland’s Market Center Pipeline System (“Market Center System”). The existing Market Center System is currently the only system capable of transporting crude oil from lease sites in Williams, McKenzie, and Mountrail Counties, North Dakota with connections to transmission pipelines that can transport the crude oil to refineries located on the Gulf Coast, Midwest, Rockies and Northeastern U.S. without utilizing truck or rail transport. Proposed construction necessitating conversion includes a proposed interconnect facility (hereinafter referred to as the “New Town Interconnect”) with a third party New Town Terminal and a modification of the existing New Town Receipt Station. The conversion of the New Town Pipeline, the modifications to the New Town Receipt Station, and the New Town Interconnect will collectively be referred to as the “New Town Expansion Project.”

The New Town Pipeline currently provides gathering services for producers seeking to move crude oil to points near the southern terminus of the New Town Pipeline. Various take-away options for producers gathering production to the New Town Terminal include rail and pipeline facilities. Recently, Hiland has placed in service a long haul crude oil transportation pipeline (the “Double H Pipeline”), which originates in Dore, North Dakota, and transports crude oil to a terminus at Guernsey, Wyoming. The Double H Pipeline has a current transportation capacity of approximately 75,000 barrels per day to move crude oil out of North Dakota to Guernsey, where producers have a variety of options to further move crude oil to Cushing, Oklahoma or other ultimate markets.

The Double H Pipeline provides critical transportation infrastructure to provide producers a much needed, permanent outlet for crude oil produced in the Bakken Shale to ultimate markets in the mid-continent. With the Double H Pipeline being placed in-service, producers now desire to use the Hiland Market Center System to move crude oil to Double H as a potential destination point, which is interconnected with the Market Center System at its most westerly point. This desire has created commercial demand for Hiland’s customers to use the New Town Pipeline for south-to-north flow, bringing barrels of crude oil from the New Town Terminal and other nearby points into the Market Center System, to ultimate destination points at or near the Double H Pipeline. To facilitate the requirements of Hiland’s customers producing crude oil to use the New Town Pipeline to move barrels of crude oil to westerly destination points on the Market Center System, Hiland is filing this Application for the New Town Expansion Project.

In accordance with Chapter 49-22 of the North Dakota Century Code, Section 69-06-08-02 of the North Dakota Administrative Code, and the Commission’s Energy Conversion and Transmission Facility Siting Guidelines, Hiland provides the following information to support its request for a Route Permit for the New Town Expansion Project.

SECTION A DESCRIPTION OF FACILITY

A.1 Type of Facility

The New Town Expansion Project consists of a modification to the existing New Town Receipt Station, installation of interconnect facilities to a third party New Town Terminal storage facility, and the resulting conversion of an existing 42.5-mile-long crude oil gathering pipeline to transmission service.

For clarity in this document, the three portions of the New Town Expansion Project will be referred to as follows:

New Town Interconnect – The proposed interconnect will be constructed within the pre-existing third party Targa Badlands LLC (“Targa”) New Town Terminal. The interconnect will consist of measurement facilities, interconnecting piping for receipt of crude from Targa’s existing 30,000 barrel (“bbl”) tank, and associated above-ground appurtenances and ancillary electrical control systems. Piping will then connect the proposed equipment to Hiland’s existing New Town Pipeline where the right-of-way (“ROW”) abuts the Targa facility. All construction and associated activities will occur on previously disturbed areas.

New Town Receipt Station – A modification of Hiland’s pre-existing 5 acre facility, which consists of valves, pumping, metering, traps, a 1,200 bbl pressure relief tank, and associated appurtenances. The proposed project involves conversion of the 1,200 bbl pressure relief tank to an inline supply tank, with the addition of associated above-ground appurtenances and ancillary electrical and control systems. The purpose of this conversion is to improve suction pressure control to the pumps at the existing New Town Receipt Station.

New Town Pipeline – The existing 42.5 mile gathering pipeline requiring conversion to transmission service. There will be no modification to the New Town Pipeline. This pipeline runs from the Dakota Plains Rail Terminal Interconnect north to the White Earth Injection Station, which connects the New Town Pipeline to the Market Center System. Other surface facilities located within the ROW along the New Town Pipeline include pipeline markers, valves, and other ancillary facilities along the length of the pipeline. All of these facilities are pre-existing.

Due to the increased volume of crude oil being gathered through the New Town Pipeline and the changing market dynamics of where producers wish to move their crude oil, as described in more detail above, it is necessary for Hiland to install the New Town Interconnect and convert the New Town Receipt Station tank to facilitate the movement of crude oil across the Market Center System and to facilitate ultimate destinations on that system, thereby converting the New Town Pipeline from a gathering line into a transmission line. Because the system is bi-directional, this conversion affects the pipeline both to the north and to the south of the New Town Receipt Station.

The New Town Expansion Project is located within Mountrail County, North Dakota. The New Town Pipeline originates five miles southwest of Ross, North Dakota at Hiland’s White Earth Injection Station and runs 42.5 miles to the south-southwest, terminating at Dakota Plains Holdings Inc.’s Pioneer rail terminal, approximately 1.5 miles southeast of New Town. Figure 3.A.1 shows the general location of the New Town Expansion Project.

Construction associated with the New Town Expansion Project will occur at two locations, as shown in Figure 3.A.2:

- The existing New Town Receipt Station, near the southern end of the New Town Pipeline in the SESW of Section 21, Township 152 North, Range 92 West.
- The proposed New Town Interconnect, at the Targa New Town Terminal in the SW of Section 21, Township 152 North, Range 92 West.

Other pre-existing above ground facilities that are associated with the New Town Expansion Project but will not be modified are:

- White Earth Injection Station - the existing connection from the New Town Pipeline to the Market Center System and the northern terminus of the New Town Pipeline.
- Dakota Plains Rail Terminal Interconnect – the existing connection from the New Town Pipeline to the Dakota Plains Holdings Inc.'s Pioneer rail terminal, and the southern terminus of the New Town Pipeline.
- Pipeline markers, valves, and other ancillary facilities within the existing pipeline ROW along the length of the New Town Pipeline.

The total cost of the New Town Expansion Project is estimated to be \$15 million.

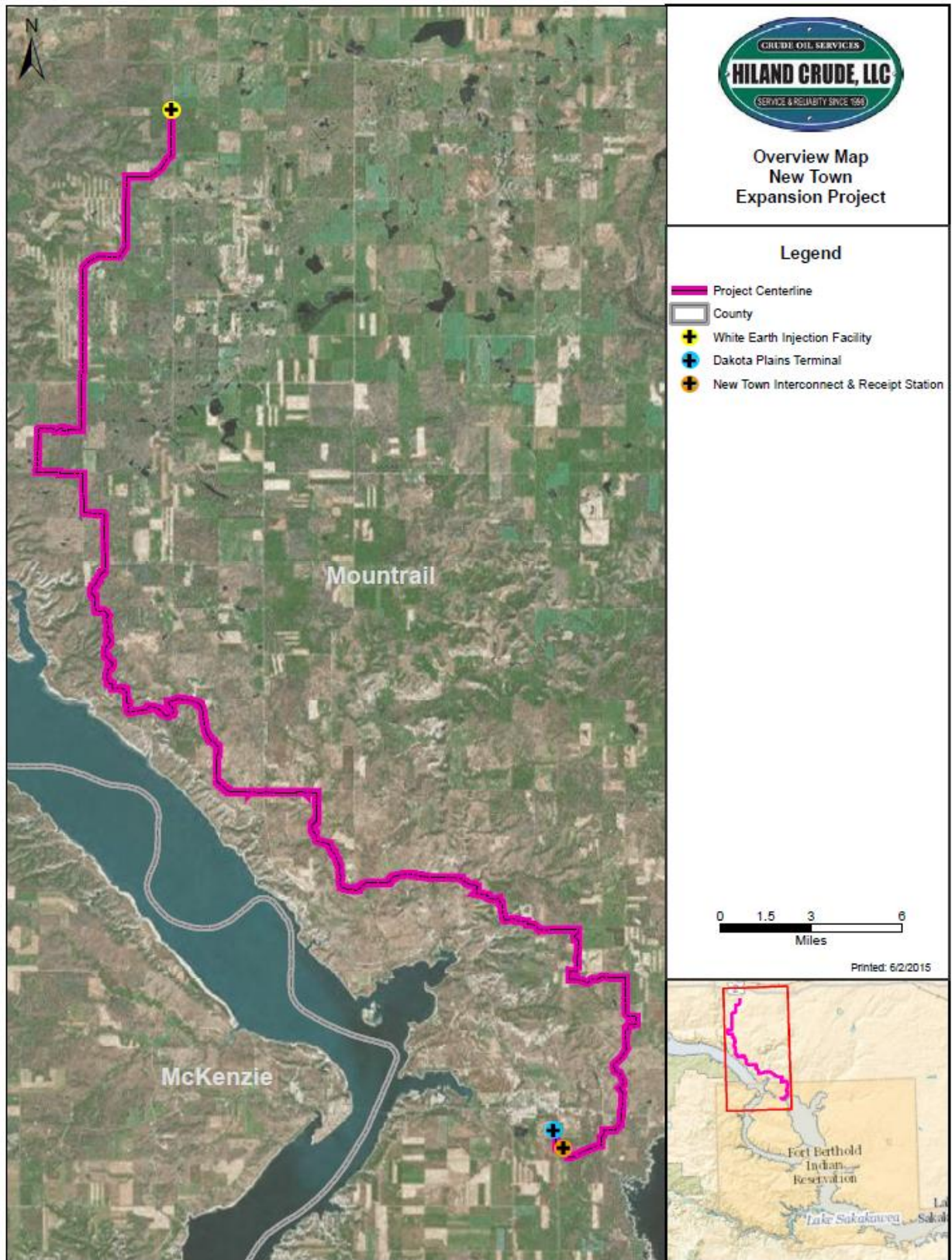


FIGURE 3.A.1 – General New Town Expansion Project Location Map

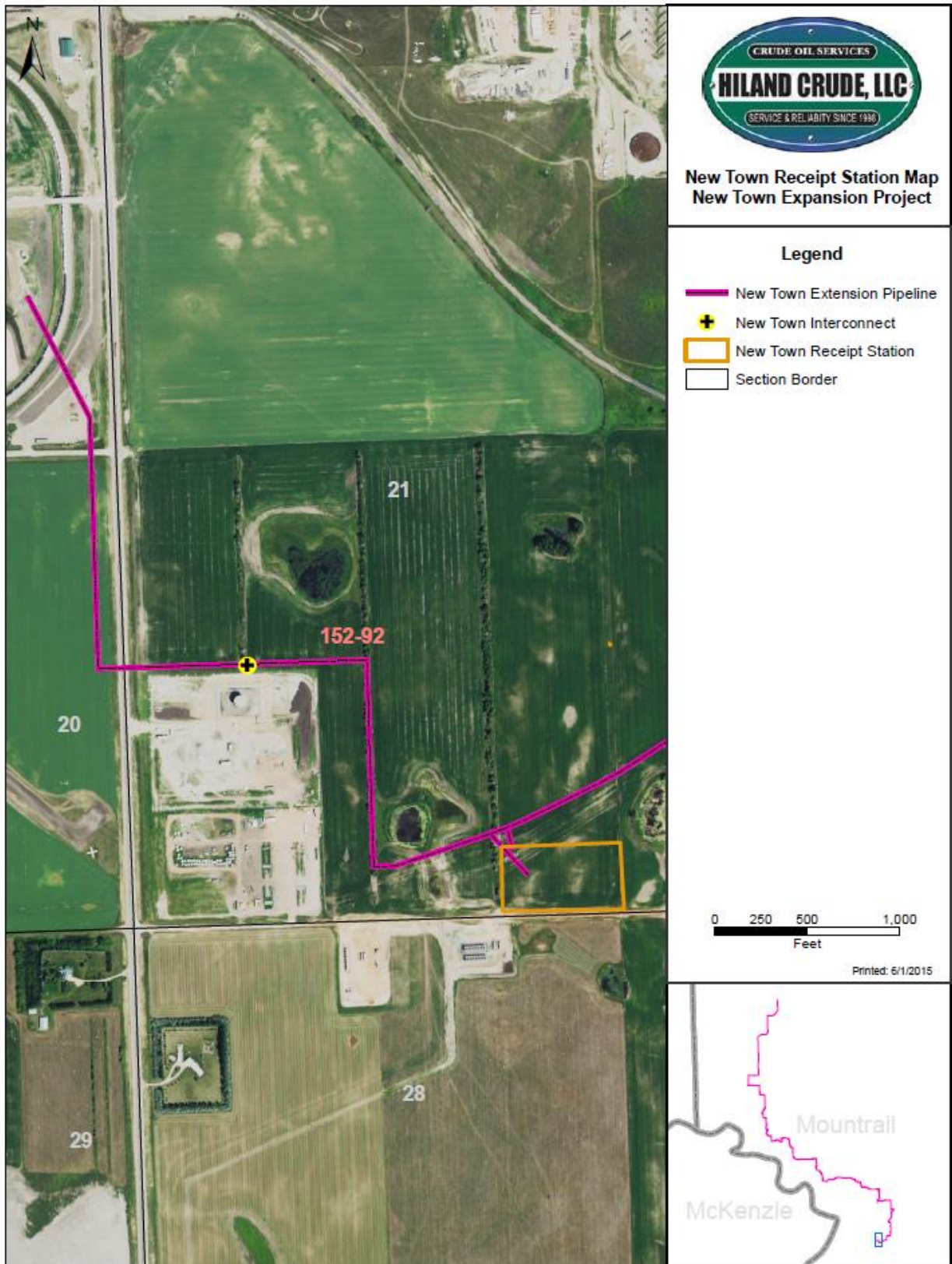


FIGURE 3.A.2 – New Town Expansion Project Facility Location

A.2 Product

The New Town Expansion Project will provide pipeline transportation for produced crude oil. Historically Hiland has operated a light sweet common stream system and Hiland will continue to accept sweet crude oil into its common stream. This specification is consistent with the quality of crude oil produced from the Bakken formation, which is currently the largest exploration play in the region.

A.3 Size and Design

Construction of the New Town Pipeline as a gathering line involved the installation of an 8-inch nominal diameter pipeline with a nominal wall thickness of 0.188 inches. The maximum operating pressure ("MOP") of the New Town Pipeline is 1,440 pounds of pressure per square inch gauge ("psig"). Upon conversion of the gathering line to a transmission line, the maximum temperature of the crude will be 120°F, which is within design parameters. However, the New Town Pipeline will typically operate between 60°F and 120°F.

For construction of the New Town Pipeline, 8-inch ANSI 600, flange end by flange end, full port, rising stem gate valves and similar ball valves were utilized for the New Town Pipeline. These valves were manufactured in accordance with American Petroleum Institute ("API") Standard 6D "API Specification for Steel, Gate, Plug, Ball and Check Valves for Pipeline Service." The MOP of the valves is 1,440 psig. Any valves necessary for the proposed New Town Expansion Project construction will be consistent with these specifications.

The steel pipe utilized for the New Town Pipeline meets United States Department of Transportation ("US DOT") regulations, specifically the design criteria outlined in the Code of Federal Regulations ("C.F.R."), Title 49, Subpart 195(C). The New Town Pipeline was originally constructed as a gathering line per 49 C.F.R. Subpart 195(D). Upon conversion to a transmission line, the New Town Pipeline will be operated and maintained per 49 C.F.R. Subpart 195(F).

A.4 Time Schedule

Hiland proposes to develop the New Town Expansion Project on the following time schedule:

A.4 (a) Certificate of Corridor Compatibility

The Certificate of Corridor Compatibility Application is being submitted in June of 2015 as part of this Consolidated Certificate of Corridor Compatibility and Route Permit Application.

A.4 (b) Route Application

The Route Permit Application is being submitted in June of 2015 as part of this Consolidated Certificate of Corridor Compatibility and Route Permit Application.

A.4 (c) Land Acquisition Date

Right-of-Way acquisition was completed prior to construction of the New Town Pipeline, and the property for the New Town Receipt Station was acquired prior to construction of the facility.

Easement for construction of the New Town Interconnect has been obtained.

A.4 (d) Issuance of Certificate of Corridor Compatibility and Route Permit

A Certificate of Corridor Compatibility and a Route Permit for the New Town Expansion Project are expected to be issued in September of 2015.

A.4 (e) Construction Start Date

Construction for the New Town Expansion Project is expected to begin in September of 2015.

A.4 (f) Construction Complete

Construction for the New Town Expansion Project is anticipated to last approximately six months following application approval, or until approximately March of 2016.

A.4 (g) Test Operations

Test operations will occur following construction of the proposed New Town Expansion Project facilities, with possible test operations to occur in March of 2016.

A.4 (h) In-Service Date

All facilities are estimated to be in-service in or before March of 2016.

SECTION B ROUTE ANALYSIS AND STUDIES

A number of criteria, including but not limited to the criteria required by Section 69-06-08-02 of the North Dakota Administrative Code, were considered in evaluating the location of the New Town Pipeline route prior to construction of the gathering line and now in conjunction with the planning for the proposed New Town Expansion Project construction, specifically: Exclusion and Avoidance Areas, Selection and Policy Criteria, Design and Construction Limitations, Economic Considerations, Human Environment, Soils, Vegetation/Wildlife, Land Use, Water Resources, and Cultural Resources. Each criterion is discussed in detail, including descriptions, potential impacts, and mitigation measures where appropriate, in Section B involving analysis and studies, or in Section C regarding siting criteria.

Analysis of the New Town Expansion Project entailed both desktop studies and field surveys. A 1-mile-wide study corridor was utilized for the entire New Town Pipeline route, with the exception of soils that were studied using a 75-foot-wide corridor (“study area”). Surveys were conducted along the entire route in the field from either helicopter or on foot within the specified survey corridor (“survey area”). Survey areas ranged from 250-foot-wide to 1-mile-wide, depending on the survey subject. Survey corridor widths are as follows: 250-foot-wide Class III survey corridor for cultural resources, 500-foot-wide survey corridor for vegetation, 1-mile-wide survey corridor for raptors, and a 1-mile-wide survey corridor for wildlife.

The New Town Pipeline route as currently constructed has been superimposed on both aerial photographic maps as well as USGS Topographic Maps that are presented in Tab 4 as Appendix 4.B, as well as electronically presented as ESRI ArcGIS software compatible data files in Tab 7.

B.1 Location

B.1 (a) Hiland’s Policies and Commitments to Limit Environmental Impact

Hiland works to protect the environment, home to its employees and customers. Protection of the environment is an integral element of Hiland’s enterprises. Environmental protection efforts will span every phase of the New Town Expansion Project, from planning through construction, restoration, and into full operation.

B.1 (b) Construction

Construction of the existing New Town Pipeline involved installation of an 8-inch steel pipe in a newly acquired ROW located in Mountrail County, North Dakota. Construction of the New Town Pipeline resulted in temporary short-term impacts, but is not expected to result in significant long-term changes to the environment.

The permanent ROW for the New Town Pipeline is 50 feet wide. During construction of the New Town Pipeline, an additional 25 feet of temporary workspace was utilized for material staging and temporary access roads. Hiland used existing public roads to access the 75-foot-wide construction ROW during construction of the New Town Pipeline, and did not modify roads or create new permanent access roads.

Ongoing environmental inspections were conducted during and following construction of the New Town Pipeline. Environmental training was provided to the construction manager, who, in

turn, trained construction inspectors to provide environmental inspections. Inspectors monitored compliance with required environmental protection measures and specifications, and provided ongoing oversight of day-to-day issues. Inspectors were well-versed in the implementation of environmental best management practices during construction. Contract specifications incorporated environmental protection and mitigation measures, which were implemented in the field. Contractor training and project orientation were provided by Hiland. Similar training and mitigation measures will be utilized for the proposed New Town Expansion Project construction.

Section D of this application further discusses mitigation measures implemented for planning, design, construction, and restoration of the New Town Pipeline. Mitigation measures to be utilized for proposed New Town Expansion Project construction and new appurtenance facilities are also discussed.

The New Town Pipeline is located primarily on private land. Approximately four miles of the pipeline occurs on private land within the Tribal reservation boundaries, and a one mile segment of North Dakota State land was crossed by the New Town Pipeline. Landowner concerns were addressed during all phases of construction for the New Town Pipeline, including final restoration. Land agents assigned to the New Town Pipeline worked closely with landowners and were responsive to issues that arose during the course of construction of the New Town Pipeline.

The existing New Town Receipt Station was constructed on 5 acres of private land using similar construction methods, mitigation measures, and landowner interactions.

Proposed construction associated with the New Town Expansion Project will be on privately owned lands. Hiland will obtain appropriate landowner agreements to construct the New Town Interconnect. Any landowner concerns arising during proposed construction of the New Town Expansion Project will be addressed by Hiland.

Proposed construction of the New Town Expansion Project will occur on existing surface facilities and pipeline ROW. Environmental impacts associated with construction will be minimized through design and use of appropriate precautions. Based on the existence of facilities at the proposed location, construction will result in temporary impacts to the soil as well as temporary noise and air emissions associated with vehicle and heavy equipment use. The soil impacts will be mitigated with the use of industry standard best management practices ("BMPs") to minimize dust and erosion and prevent offsite sediment migration. Noise impacts will be managed by restricting routine construction activities to daylight hours.

B.1 (c) Ongoing Operation

Hiland has a continuing commitment to conduct its operations in a safe and environmentally responsible manner. Substantial, continual effort is placed on pipeline integrity, product control, operational safeguards, environmental compliance, emergency response, and landowner relationships, all of which reduce the impact of the New Town Expansion Project on the environment. Hiland supplements the support of its existing internal environmental staff with engineering and environmental consultants as necessary to ensure compliance with regulations and applicable company policy. Additional information regarding operations and safety is provided in Section G.3.

The environmental impacts associated with the operation of the proposed New Town Expansion Project will be minimized through design and prudent operation. Operation of the facility will result in noise levels that are consistent with the existing use associated with the adjacent facility. The facility will be operated in compliance with all applicable regulations, permits, and plans, including appropriate control of the tank's air emissions in accordance with a Minor Permit for air emissions.

B.1 (d) Energy Conservation Considerations

Conversion of the New Town Pipeline to a transmission line will expand Hiland's service area while improving crude oil delivery destination options for system shippers.

The key energy economic impact will be the substitution of the most energy efficient mode of crude oil transportation, i.e., pipeline, for the least efficient mode of transportation, i.e., on-road transport via cargo tanker truck. The conversion and installation of interconnect facilities for the New Town Expansion Project will add approximately 18,000 barrels per day ("bbls/day") of capacity to the system, for a maximum capacity of approximately 36,000 bbls/day.

Beyond the direct energy benefit of using an efficient mode of transportation (e.g., a pipeline), energy conservation is a major concern at Hiland. Power/energy costs represent the largest single recurring expense in pipeline operation. Attention is continually being directed toward energy conservation. Hiland's energy conservation goal is to minimize power/energy unit costs through the implementation of internal programs directed at continuous improvement of energy utilization efficiency.

Hiland control operators are trained in applied hydraulics and pipeline control. They are trained to operate the pipeline at a natural flow rate using efficient combinations of pump stations, thereby minimizing energy consumption. Operators have the capability to start and stop pumps and monitor pipeline operating conditions to assist in achieving an energy efficient operation.

B.2 Human Environment

The New Town Expansion Project study area is sparsely populated, with ranching and farming as the predominant economic activities. The New Town Pipeline route crosses land owned by 38 different landowners. The route does not pass through parks or recreational areas.

The New Town Pipeline route passes within 500 feet of nineteen residences. However, Hiland has obtained waivers from these residences in accordance with N.D.C.C. § 49-22-05.1. See Section C.4 involving avoidance areas for a more detailed discussion.

The majority of the New Town Pipeline route is located on private land. Landowner concerns and routing preferences were addressed during the establishment of easement agreements and through all phases of construction, including final restoration, of the New Town Pipeline. Land agents assigned to the New Town Pipeline worked closely with landowners and were responsive to issues that arose during construction of the gathering line to the extent practicable.

No municipal water supplies or production water wells were identified within the study area.

Small portions of the New Town Pipeline as constructed are located on land under the jurisdiction of the State of North Dakota. However, no permanent population resides in this area.

The New Town Pipeline transects two North Dakota highways, ND-1804 and ND-23. Of the 37 other county roads or access roads crossed, 23 are improved roads (i.e., gravel or asphalt). For construction of the New Town Pipeline, improved roads were crossed via horizontal directional drilling or boring. Through traffic was not disrupted during the boring process. Fourteen two-track vegetated trails were open cut. The open cut trails were temporarily disrupted during construction of the New Town Pipeline.

Road crossings for the New Town Pipeline route are summarized in Table 3.B.1.

For construction of the New Town Pipeline, all roads and section line crossings were subject to review and approval by the County Engineer and County Commission. Necessary applications were submitted and permits obtained for the road crossings prior to the start of construction for the New Town Pipeline.

TABLE 3.B.1 – New Town Pipeline Road Crossings

Legal Description	Coordinates	Road Name	Description of Road
Mountrail County			
SENE S20 T152N R92W	47°58'14" N 102°28'21" W	College Dr.	Gravel
NESE S20 T152N R92W	47°58'2" N 102°28'19" W	East Ave	Asphalt Paved
SESW S21 T152N R92W	47°57'52"N 102°27'49"W	Un-named Road	Gravel
NESE S21 T152N R92W	47°58'14"N 102°27'3"W	Un-named Road	Railroad Crossing
SENE S21 T152N R92W	47°58'16"N 102°27'1"W	87 th Ave NW	Gravel
NENW S22 T152 R92W	47°58'40"N 102°26'29"W	Highway 23	Asphalt Paved
NWSE S10 T152N R92W	47°59'58"N 102°26'20"W	Un-named Road	Two Track Vegetation
NWNE S10 T152N R92W	48°0'26"N 102°26'4"W	87 th Ave NW	Gravel
NWSE S3 T152N R92W	48°0'45"N 102°26'22"W	Un-named Road	Two Track Vegetation
S3 T152N R92W	48°1'19"N 102°27'1.36"W	Un-named Road	Gravel
NENW S4 T152N R92W	48°1'24"N 102°27'57"W	42 nd St. NW	Gravel
NWNW S35 T153N R92W	48°2'13"N 102°28'42"W	Un-named Road	Two Track Vegetation
SESE S27 T153N R92W	48°2'21"N 102°29'10"W	Un-named Road	Gravel
SWNW S27 T153N R92W	48°2'49"N 102°30'2"W	Un-named Road	Gravel
SESW S21 T153N R92W	48°3'10"N 102°31'1"W	45 th St. NW	Gravel

Hiland Crude, LLC
Route Application
New Town Expansion Project

Legal Description	Coordinates	Road Name	Description of Road
Mountrail County			
SWSE S20 T153N R92W	48°3'15"N 102°32'51"W	Un-named Road	Two Track Vegetation
SWSW S20 T153N R92W	48°3'16"N 102°32'51"W	Un-named Road	Two Track Vegetation
NENW S30 T153N R92W	48°3'6"N 102°33'50"W	90 th Ave NW	Gravel
NWNW S30 T153N R92W	48°2'58"N 102°34'5"W	Un-named Road	Two Track Vegetation
NWNW S24 T153N R93W	48°3'54"N 102°35'8"W	Un-named Road	Two Track Vegetation
NWNW S13 T153N R93W	48°4'51"N 102°35'21"W	Un-named Road	Two Track Vegetation
NENE S14 T153N R93W	48°4'52"N 102°35'39"W	Un-named Driveway	Gravel
NWNW S14 T153N R93W	48°4'52"N 102°36'38"	Un-named Access Road	Scoria
NENE S15 T153N R93W	48°4'51"N 102°36'45"W	County Highway 1804	Asphalt Paved
SWSW S33 T154N R93W	48°6'38"N 102°39'8"W	Un-named Road	Two Track Vegetation
SESE S31 T154N R93W	48°6'51"N 102°40'52"W	Un-named Access Road	Scoria
SWNE S31 T154N R93W	48°7'11"N 102°41'11"W	Un-named Road	Two Track Vegetation
NENE S12 T154N R94W	48°10'57"N 102°41'56"W	96 th Ave NW	Gravel
NENW S12 T154N R94W	48°10'58"N 102°42'35"W	53 rd St NW	Gravel
NWNE S1 T154N R94W	48°11'45"N 102°42'27"W	Un-named Access Road	Scoria
NENE S36 T155N R94W	48°12'42"N 102°41'57"W	County Highway 1804	Asphalt Paved
SESE S25 T155N R94W	48°12'52"N 102°41'56"W	96 th Ave NW	Gravel
NWNW S19 T155N R93W	48°14'13"N 102°41'55"W	Un-named Private Road	Gravel
NWNW S19 T155N R93W	48°14'26"N 102°41'55"W	57 th St NW	Gravel
SESE S7 T155N R93W	48°15'18"N 102°40'41"W	58 th St NW	Gravel
SESE S6 T155N R93W	48°16'10"N 102°40'41"W	59 th St NW	Gravel
SENE S5 T155N R93W	48°16'37"N 102°40'2"W	Un-named Road	Two Track Vegetation
SESE S32 T156N R93W	48°17'2"N 102°39'23"W	60 th St NW	Two Track Vegetation
SENE S32 T156N R93W	48°17'28"N 102°39'23"W	Un-named Road	Two Track Vegetation
NENE S32 T156N R93W	48°17'53"N 102°39'23"W	Un-named road	Two Track Vegetation

The proposed New Town Interconnect is located on private fee land, within an existing facility with similar operations and use. Landowner concerns will be addressed for this facility as they were with the pipeline. The New Town Interconnect will not require any new road crossings. All applicable permits will be obtained for construction and operation of the facility.

The New Town Receipt Station is located on private land, and the proposed modification of this facility will be performed within the existing facility. It was constructed in accordance with all permits. All applicable permits will be obtained for the proposed facility modification and operation of the facility. Based on final design of the facilities, the project may require registration with the EPA of the tankage as a Minor Source of air emissions; depending on the True Vapor Pressure, which will be evaluated prior to in-service, a combustion device may be required to control tank emissions.

B.3 Terrain and Geology

The New Town Expansion Project study area is located in the glaciated Missouri Plateau section of the Great Plains Physiographic Province in western North Dakota. The Missouri Plateau (Coteau du Missouri) is characterized by low relief and gentle slopes interrupted by buttes and ridges. In the glaciated section, the drift is generally thin except for valley fill so the topography reflects the pre-glacial topography. Major drainages are the Missouri, Yellowstone, and Little Missouri Rivers. The Missouri River formed when glaciers blocked the northeastward flowing drainages and diverted drainage flowing southeastward along the margin of the glacier. The Little Missouri River flowed northward in the valleys now occupied by Red Wing Creek and Tobacco Garden Creek prior to glaciations. Subsequently it was diverted eastward from Red Wing Creek. Similarly, the Yellowstone River flowed through the Charbonneau Creek-Timber Creek Valley prior to glaciations. The process of adjustment to the lowered base level of the Missouri River is developing a band of badlands along these drainages.

The New Town Expansion Project study area is located entirely in the Williston Basin, a large elliptical depression bounded by the Canadian Shield (northeast), Alberta Shelf (northwest), Black Hills (southeast), and Wisconsin Dome (southwest). The Williston Basin covers about 300,000 square miles. The Williston Basin is a structurally simple basin, deepest at its center (16,000 feet below the surface near Williston, North Dakota), becoming shallower and thinner towards its edges.

The New Town Pipeline route traverses various bedrock and surface geology including the Coleharbor Formation, Sentinel Butte Formation, and Bullion Creek Formation. Bedrock is exposed along the major drainages in Mountrail County near the Missouri River. Other than these major drainages where bedrock forms the surface material, only formations above the Cannonball Formation are exposed at the surface in Mountrail County.¹ In addition to bedrock, the New Town Expansion Project study area includes many surficial geological materials, including: Quaternary alluvium, colluviums, and glacial till (sand, gravel, and clay). The near surface sediment is of Recent, Pleistocene, or Tertiary age. Recent sediment consists of alluvium or colluvium which is generally confined to lowland areas of current Pleistocene drainage. Pleistocene sediments consist of till on the upland areas and water-sorted sediment in and along glacial drainages.

¹ Lee Clayton, *Geology of Mountrail County North Dakota*, North Dakota Geological Survey Bulletin 55-IV, North Dakota State Water Commission County Ground Water Study 14-IV (1972).

Surface elevations along the route range from approximately 1,900 feet to 2,400 feet.

B.3 (a) Geologic Hazards

Potential geologic hazards along the New Town Pipeline route include seismic hazards, landslides, subsidence, and flooding. Because the New Town Expansion Project is located in relatively flat and stable terrain as opposed to active mountain belts or coastal areas, the potential for geologic hazards is reduced.

Seismic Hazards

There are three major phenomena associated with seismic hazards: faults, seismicity, and ground motion. A fault is a fracture along which the blocks of crust on either side have moved relative to one another parallel to the fracture. Rapid slippage of blocks of crust past each other can cause energy to be released, resulting in an earthquake. No active faults have been identified in the New Town Expansion Project study area, according to the U.S.G.S. Geologic Hazards Science Center.² An active fault is one in which movement can be demonstrated to have taken place within the last 10,000 years.

North Dakota historically contains little earthquake activity and is therefore not in an area of seismicity. No earthquakes of intensity V or above (Modified Mercalli Scale) have occurred within North Dakota during historical times. Furthermore, using the U.S. Geological Survey 2009 PSHA Model for predicting probabilities of earthquake occurrence and magnitude, there is less than a 2 percent chance of an earthquake occurring within the New Town Expansion Project study area within the next 50 years.

The USGS ground motion hazard mapping indicates that potential ground motion hazard in the New Town Expansion Project study area is low. The hazard map uses estimated peak ground acceleration expressed as a percentage of the acceleration due to Earth's gravity. According to the ground motion hazard map there is a 2 percent probability of exceedance in 50 years; furthermore, the map predicts the most likely exceedance to be minor.³

Landslides

Landslides can be defined as gravity-caused mass movements of earth material. Included in this definition are rock falls, slumps, rock slides, mud slides, and debris flows. Landslide risks are highest in areas with steep slopes, and typically occur on steep terrain during conditions of partial or total soil saturation. In areas with landslide risk, anything impacting slope condition, such as seismic activity, construction, and increased soil moisture all aid in increasing mass movements. Landslide susceptibility is defined as the probable degree of response of the areal rocks and soils to natural or artificial cutting or loading of slopes, or to anomalously high precipitation. The majority of the New Town Expansion Project study area is located in low landslide incidence terrain. However, the New Town Pipeline route crosses areas that have moderate landslide susceptibility, yet historically low incidence. Figure 3.B.1 shows the

² U.S. Geological Survey, U.S.G.S. Geologic Hazards Science Center, Quaternary Fault and Fold Database of the United States, *available at* <http://earthquake.usgs.gov/hazards/qfaults> (accessed June 11, 2015).

³ U.S. Geological Survey (USGS), Geologic Hazards Science Center, *available at* <http://geohazards.usgs.gov/hazards/apps/cmaps/> (accessed June 11, 2015).

landslide risk of the New Town Expansion Project. The proposed New Town Expansion Project will be located in an area with moderate landslide susceptibility, yet historically low incidence.

Subsidence

Subsidence, a gradual settling or sudden sinking of earth's surface, is not a major concern along the New Town Pipeline route. Subsidence is commonly caused by underground mining, drainage of organic soils, thawing permafrost, natural compactions, and depletion of aquifer systems. In the New Town Expansion Project area, the only potential concern is underground mining. Because all of the mines (open and closed) within 15 miles of the New Town Expansion Project are open pit, the concern for subsidence is minimal.⁴

Flooding

In North Dakota, most flooding occurs in the spring, when the winter snow cover melts. While flooding is generally considered a geologic hazard, the potential for a flood to negatively impact the New Town Expansion Project is minimal. The New Town Pipeline as constructed is waterproof and, thus, the only hazard that exists is scouring.

For a flood event to affect the pipeline, 4 to 6 feet of the surface must be displaced. During construction of the New Town Pipeline, all standing water was bored for pipe installation which resulted in depths below streams and intermittent streams significantly below the 6 foot maximum depth required by Commission criteria. All streams crossed for construction of the New Town Pipeline are minor in size. Even flood events are not expected to present a scour risk in streams of this size. In addition, inspection of pipeline routes required under US DOT Part 195 will include a regular assessment for impacts due to flooding.

Following construction of the New Town Pipeline, control of surface soil erosion was proactively managed while awaiting re-vegetation. Repair to soil cover will continue to occur until re-vegetation is complete. Any erosion occurring from construction of proposed above ground facilities for the New Town Expansion Project will be managed and repaired.

⁴ U.S. Geological Survey, Mineral Resources Data System (MRDS), Mineral Resource Data for North Dakota, available at <http://tin.er.usgs.gov/mrds/> (accessed June 11, 2015).

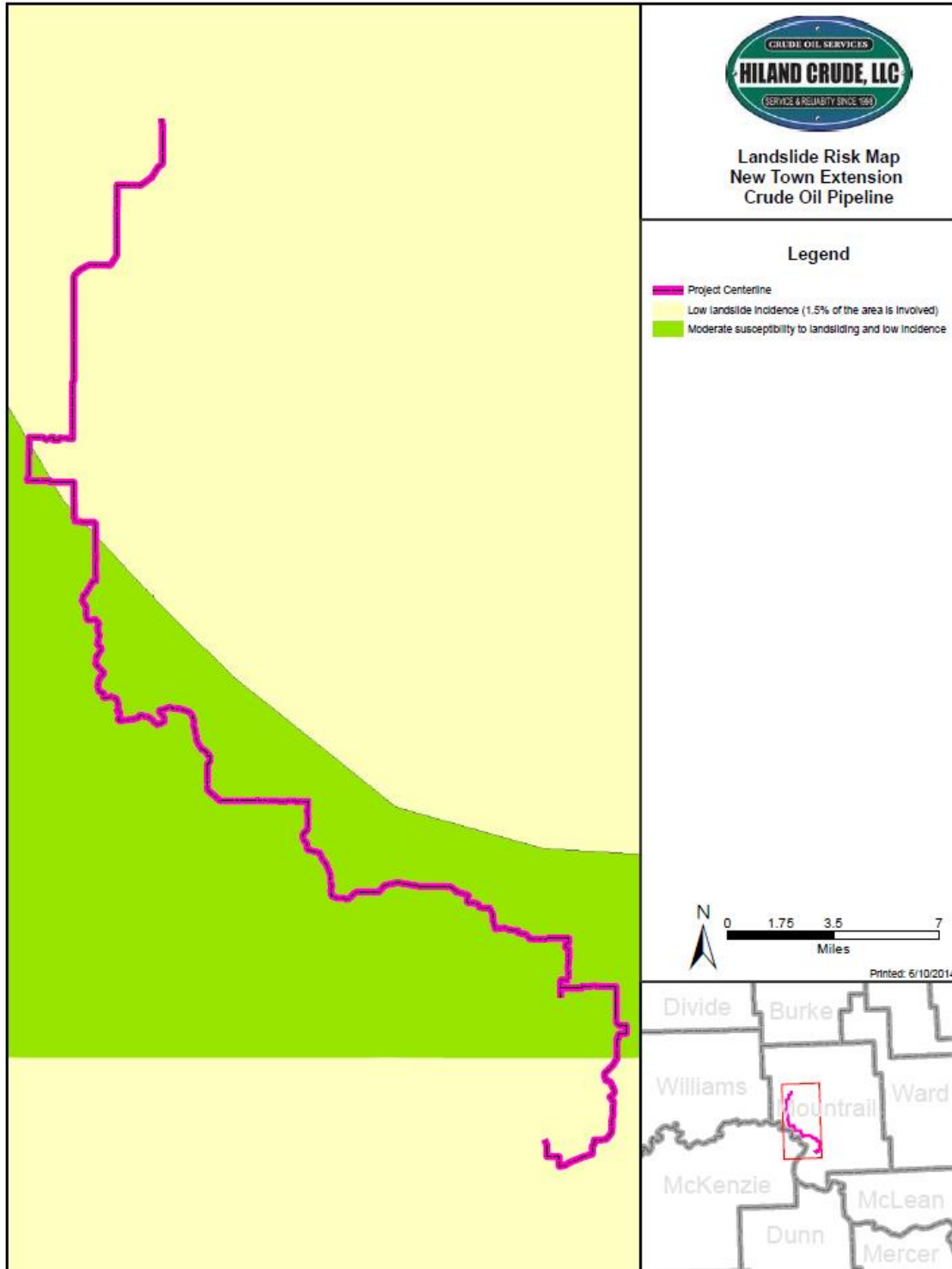


FIGURE 3.B.1 – New Town Expansion Project Landslide Risk⁵

⁵ U.S. Geological Survey Professional Paper 1183, "USA Landslide Susceptibility," U.S. Geological Survey, accessed via ArcGIS Online.

B.4 Soils

Detailed soil characteristics along the New Town Pipeline route were identified and assessed using the Soil Survey Geographic database (“SSURGO;” U.S. Department of Agriculture (“USDA”), Natural Resources Conservation Service (“NRCS”), 2003). The SSURGO database is a digital version of the original county soil surveys developed by the NRCS for use with geographic information systems (“GIS”). It provides the most detailed level of soil information for natural resource planning and management. The mapping scale in the New Town Expansion Project study area is 1:20,000, with a minimum delineation size of 4.0 acres. SSURGO is linked to an attribute database that gives the proportionate extent of the component soils and their properties for each map unit (USDA, NRCS 1995). The SSURGO database was used to define soil characteristics along the New Town Pipeline route in Mountrail County. SSURGO attribute data consist of physical properties, chemical properties, and interpretive groupings. Attribute data apply to the whole soil (e.g., listed hydric, prime farmland soils, slope class) as well as to layer data for soil horizons (e.g., texture, permeability). The soil attribute data can be used in conjunction with spatial data to describe the soils in a particular area.

The New Town Expansion Project study area is located in the Central Dark Brown Glaciated Plains (Major Land Resource Area 53B) and the Rolling Soft Shale Plain (Major Land Resource Area 54) both belonging to the Northern Great Plains Spring Wheat Region. The New Town Expansion Project study area lies within the Glaciated Missouri Plateau Section of the Great Plains Physiographic Province.

The soils in the New Town Expansion Project study area range from having course to fine loamy and fine silty soils.

Wind erosion may be a hazard on most of the soils in the New Town Expansion Project area. Wind erosion is severe on the coarse textured and moderately coarse textured soils. These are primarily the Appam, Dooley, Flasher, Livona, Parshall, Tally, Vebar, Velva, and Wabek soils. Certain soils have a relatively high content of lime. They are primarily the Cabba, Chama, Cherry, Havrelon, Korchea, Maschetah, and Zahl soils. They are susceptible to wind erosion in the spring if they have been bare throughout the winter. Because of freezing and thawing, soil structure can break down, resulting in aggregates that are susceptible to movement. This phenomena can also cause fine textured soils such as Heil, Lallie, Nutley, and Wildrose soils to have a severe wind erosion hazard. Nearly all soils can be damaged by wind erosion if they are not protected by residue.

Water erosion is a hazard on gently rolling and steeper soils, such as Cabba, Chama, Cherry, Dogtooth, Flasher, Janesburg, Lonna, Vebar, Williams, and Zahl. The hazard is greatest when the surface is bare, therefore, the precautions outlined in the Environmental Mitigation Plan (“EMP”) found in Tab 5 were implemented for New Town Pipeline construction to minimize impacts. Similar measures will be implemented for proposed construction of the New Town Expansion Project if necessary.

Tables 3.B.2 and 3.B.3 list the soil associations, the approximate acreage of each soil association, and provide a summary of soil limitations for the New Town Pipeline route. STATSGO MUIDs are geologically and geographically related soils which correspond to soil associations. Approximately 0.6 percent of the soils located in the New Town Expansion Project study area (2.4 acres of the 386 acres within the study area) are NRCS-classified prime

farmland, provided there is sufficient artificial drainage to remove excess surface water and sufficient irrigation.

Potential temporary effects on soil resources include the loss of soil productivity due to erosion, soil mixing, or soil compaction. Soil disturbances associated with clearing, grading and trenching expose soils to water and wind and increase the potential for erosion. Analysis of STATSGO data indicates that soils in the New Town Expansion Project study area are susceptible to erosion by wind. Soil erosion by water is also common along the New Town Pipeline route. During construction of the New Town Pipeline, the effects of erosion by water on steep slopes was mitigated by the use of silt fences and other erosion control measures as described in Hiland’s EMP (see Tab 5).

Soil productivity could have potentially been affected if topsoil mixed with subsoil during New Town Pipeline construction. To minimize this potential, topsoil was segregated during trench excavation. Topsoil was removed to a maximum depth of 12 inches from the trench and spoil storage area unless otherwise requested by the landowner. Topsoil was stored separately from the trench spoil and was returned to its approximate original location after the trench was backfilled.

TABLE 3.B.2 – New Town Pipeline Study Area Soil Characteristics

County	Total Acres	Prime Farmland	Hydric Soils	Highly Erodible	
				Water	Wind
Acres ^a (%)					
Mountrail	386	2.4 (0.6)	3.2 (0.8)	61.7 (80)	55.8 (72)

^aAcreege is based on a 75-foot wide construction right-of-way and does not include access roads, temporary extra workspace, or areas of open water, and does not account for reduced right-of-way widths in wetlands and forested areas. Prime Farmland includes areas that are prime if drained or irrigated

TABLE 3.B.3 – New Town Pipeline Study Area Topsoil Depths and Slope Classes

County	Total Acres	Topsoil Depth (Inches) *Depth to restrictive feature				Slope Class (%)				
		0-6	>6-12	>12-18	>18	0-6	>6-9	>9-15	>15-30	>30
Acres ^a (%)										
Mountrail	386	19.9 (5.2)	0.0 (0.0)	25.6 (6.6)	340.5 (88.2)	146.7 (38.0)	76.6 (19.8)	141.1 (36.6)	21.6 (5.6)	0.0 (0.0)

^aAcreege is based on a 75-foot wide construction right-of-way and does not include access roads, temporary extra workspace, or areas of open water, and does not account for reduced right-of-way widths in wetlands and forested areas.

Construction of the New Town Pipeline caused temporary removal of vegetation and resulted in temporary exposure of soil. These actions may have resulted in some minor temporary erosion. Re-vegetation of disturbed areas with native species mitigates these concerns.

Heavy equipment used to construct the New Town Pipeline may have caused soil compaction along the right-of-way. During construction, soils are tilled with a chisel plow or other deep-tillage equipment to loosen the soil to the reasonable satisfaction of the landowner. Because the soils of the New Town Pipeline study area generally have a high shrink-swell potential, compaction will correct itself over time as the soil goes through wet-dry and freeze-thaw cycles.

The proposed construction for the New Town Expansion Project will follow the same construction procedures and mitigation measures discussed above to minimize or alleviate any impacts to soils.

B.5 Vegetation and Wildlife

Investigations were conducted on potential impacts to wildlife and plant species as a result of the New Town Expansion Project. Information was gathered from a variety of sources to compile the existing conditions of plant, wildlife, and critical habitats within the proposed corridor. Sources included field surveys, literature reviews, and personal communications with agencies. The North Dakota Game and Fish Department (“NDGFD”), the United States Fish and Wildlife Service (“USFWS”), Crosby Wetland Management District, the North Dakota Parks and Recreation Department (“NDPRD”), and the US Army Corps of Engineers (“USACE”) were contacted to assist in identifying species and ecologically significant habitats within the New Town Expansion Project study area and along the New Town Pipeline route as currently constructed. Possible areas of concern discussed with these agencies included federally-listed endangered, threatened, candidate, sensitive or watch species, state-listed protected species, and critical habitats.

The USACE was provided a map of the route, indicating the present location of the New Town Pipeline. USACE regulatory offices administer Section 10 of the Rivers and Harbors Act (Section 10) and Section 404 of the Clean Water Act (Section 404). The USACE requested that applicable permits relating to Nationwide Permit 12, Section 10, or Section 404 be applied for and obtained from the USACE regulatory office for proposed construction. No new navigable river crossings are being proposed, nor any fill materials intended to be placed in jurisdictional waters, for proposed New Town Expansion Project construction. All other river crossings and wetlands were horizontally directionally drilled for New Town Pipeline construction and, therefore, USACE permits are not required.

The NDGFD does not believe the New Town Expansion Project will have any significant adverse effects on wildlife or wildlife habitat, provided any wetland areas impacted by proposed construction activities are mitigated and disturbed areas are reclaimed to pre-project conditions.

The USFWS was provided with an overview map of the New Town Pipeline route. The USFWS offered comments under the authority of and in accordance with the Migratory Bird Treaty Act (16 U.S.C. 703 *et seq.*), the Endangered Species Act (16 U.S.C. 1531 *et seq.*), the National Wildlife Refuge System Improvement Act of 1997 (Public Law 105-57), and the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d, 54 Stat. 250). In addition to USFWS comments under authority, recommendations were made for: wetlands, USFWS property interests, and restoration activities. In an effort to comply with the USFWS, Hiland conducted field surveys as described in Section B.5. New construction for the proposed New Town Expansion Project will not result in “take” of any federally listed species, migratory birds, or bald and golden eagles.

The Crosby Wetland Management District was sent an overview of the New Town Expansion Project and no comments have been received.

The North Dakota Natural Heritage Inventory System maintained by the NDPRD was reviewed for Species of Concern that were identified by prior field studies within the one-mile-wide environmental study area. A map was provided to the NDPRD for the analysis of each location

of concern. This information was incorporated into the field training and reference information used during the biological field survey conducted in May, June, July, August, and September of 2013 and May of 2014. Findings are reported on the appropriate plate in Appendix 4.B in Tab 4, as well as electronically presented as ESRI ArcGIS software compatible data files in Tab 7.

Field surveys were conducted on foot and via utility terrain vehicle. Field data was collected with Trimble Juno 5B, GeoXH 2008, and 6000 Series Global Positioning System handhelds and photographs were taken along the entire length of the route.

Analysis within the survey area included a complete inspection for species of concern, habitat components required to support species of concern, noxious weeds, and wetlands. The survey area was expanded to encompass nearby areas that may have been impacted by construction of the New Town Pipeline or may be impacted by the proposed New Town Expansion Project. Species of concern, noxious weeds, plant species and wildlife species were identified in the field and mapped. Any unknown species were photographed and later identified using available up-to-date literature. Personal communications and knowledge of species and species habitat were used to make a determination regarding the potential effects of the New Town Expansion Project.

B.5 (a) Vegetation

Botany surveys utilizing a 500-foot corridor were performed along the approximately 42.5-mile-long New Town Pipeline route in Mountrail County during May of 2014. The New Town Expansion Project survey area crosses terrain mainly consisting of prairies, pasture land, cropland and wetlands. Grass species common in the New Town Expansion Project survey area are: blue grama (*Bouteloua gracilis*), crested wheatgrass (*Agropyron cristatum*), green foxtail (*Setaria viridis*), green needlegrass (*Nassella viridula*), intermediate wheatgrass (*Thinopyrum intermedium*), Japanese brome (*Bromus japonicas*), Junegrass (*Koeleria macrantha*), Kentucky bluegrass (*Poa pratensis*), little bluestem (*Schizachyrium scoparium*), needle-and-thread (*Hesperostipa comate*), needleleaf sedge (*Carex duriuscula*), prairie dropseed (*Sporobolus heterolepis*), purple lovegrass (*Eragrostis spectabilis*), red threeawn (*Aristida purpurea*), sideoats grama (*Bouteloua curtipedula*), smooth brome (*Bromus inermis*), and western wheatgrass (*Pascopyrum smithii*).

Common forbs within the New Town Expansion Project study area include alfalfa (*Medicago sativa*), Alumroot (*Heuchera americana*), American licorice (*Glycyrrhiza lepidota*), blue lettuce (*Lactuca tatarica*), Canada anemone (*Anemone canadensis*), cocklebur (*Xanthium strumarium*), common burdock (*arctium minus*), common dandelion (*Taraxacum officinale*), common lambsquarters (*Chenopodium album*), common ragweed (*Ambrosia artemisiifolia*), common sunflower (*Helianthus annuus*), common yarrow (*Achillea millefolium*), curlycup gumweed (*Grindelia squarrosa*), cushion milkvetch (*Astragalus aretioides*), dotted blazing star (*Liatris punctata*), Drummond's false pennyroyal (*Hedeoma drummondii*), early cinquefoil (*Potentilla concinna*), early yellow locoweed (*Oxytropis sericea*), false dandelion (*Nothocalais cuspidata*), field bindweed (*Convolvulus arvensis*), field pennycress (*Thlaspi arvense*), field sagewort (*Artemesia campestris*), fringed sagewort (*Artemesia frigid*), goatsbeard (*Tragopogon porrifolius*), goldenrods (*Solidago spp.*), ground plum (*Astragalus crassicaarpus*), hairy-golden aster (*Heterotheca villosa*), harebell (*Campanula rotundifolia*), heath aster (*Symphotrichum ericoides*), Indian breadroot (*Pedimelum aromaticum*), milkweeds (*Asclepias spp.*), Missouri milkvetch (*Astragalus missouriensis*), moss phlox (*Phlox subulata*), narrowleaf milkvetch (*Astragalus pectinatus*), owl's clover (*Orthocarpus luteus*), perennial sowthistle (*sonchus*

arvensis), plains pricklypear cactus (*Opuntia polyacantha*), poison ivy (*Toxicodendron rydebergii*), prairie crocus (*Anemone patens*), prairie rose (*Rosa arkansana*), prairie skeletonplant (*Lygodesmia juncea*), purple coneflower (*Echinacea angustifolia*), purple prairie clover (*Dalea purpurea*), purple rockcress (*Arabis divaricarpa*), Russian thistle (*Salsola tragus*), sagebrush buttercup (*Ranunculus glaberrimus*), scarlet globemallow (*Sphaeralcea coccinea*), silver sagebrush (*Artemisia cana*), silverleaf scurfpea (*Psoralea argophylla*), small-leaved pussytoes (*Antennaria aprica*), stinging nettle (*Urtica dioica*), tansy mustard (*Descurainia pinnata*), textile onion (*Allium textile*), three-flowered avens (*Geum triflorum*), wavyleaf thistle (*Cirsium undulatum*), Western wallflower (*Erysimum aperum*), white cinquefoil (*Potentilla arguta*), white milkwort (*Polygala alba*), wild bergamont (*Monarda fistulosa*), wild blue flax (*Linum lewisii*), wood lily (*Lilium philadelphicum*), woolly plantain (*Plantago patagonica*), yellow evening primrose (*Oenothera flava*), and yellow sweetclover (*Melilotus indicus*).

Plant communities established in wetlands include common cattail (*Typha latifolia*), creeping spikerush (*Eleocharis fallax*), curly dock (*Rumex crispus*), scouring rush (*Equisetum hyemale*), prairie cordgrass (*Spartina pectinata*), reed canarygrass (*Phalaris arundinacea*), and water smartweed (*Polygonum amphibium*).

The following state-listed species of concern was identified during the biological field survey conducted in the New Town Expansion Project survey area in May of 2014: Hooker's townsendia (*Townsendia hookeri*). No species were identified within the construction ROW for the New Town Pipeline or at the location for the proposed New Town Expansion Project. No federally threatened or endangered species were identified within the construction ROW. Findings are reported on the appropriate plate in Appendix 4.B in Tab 4, as well as electronically presented as ESRI ArcGIS software compatible data files in Tab 7.

The primary impact on vegetation was removal from the ROW during construction activity for the New Town Pipeline.

In areas that required re-vegetation, Hiland specified appropriate seed mixes, application rates, and seeding dates, taking into account the requirements and recommendations of appropriate state and federal agencies as well as preferences of landowners. This same procedure will be followed for any re-vegetation necessary following construction of proposed facilities for the New Town Expansion Project.

Species that are considered noxious weeds under North Dakota state law are listed in Table 3.B.4. Noxious and invasive species that were recorded during field survey and that are a concern on farm and pasture land are: common burdock (*Arctium minus*), leafy spurge (*Euphorbia esula*), and Canada thistle (*Cirsium arvense*).

TABLE 3.B.4 – Noxious Weeds Listed Under North Dakota State Law

Common Name	Scientific Name	State Status	Mountrail County Status	Impact
Baby's Breath	<i>Gypsophila paniculata</i>	Invasive		Displaces native vegetation. Reduces protein content of desirable grasses.
Halogeton	<i>Halogeton glomeratus</i>	Invasive		Extremely difficult to control. The extensive root system and twine-like growth disrupts harvesting operations and replaces desirable vegetation.
Burdock: Common	<i>Arctium minus</i>	Invasive		Displaces important plant communities. Taint milk products if heavily grazed.
Henbane: Black	<i>Hyoscyamus niger</i>	Invasive		Toxic to humans and animals. Replaces desirable native species.
Houndstongue	<i>Cynoglossum officinale</i>	Invasive	Noxious	Displaces desirable plant communities, decreases grazing.
Common tansy	<i>Tanacetum vulgare</i>	Invasive	Noxious	Aggressive plant that can form dense vegetative colonies, thus reducing rangeland productivity.
Knapweed: Diffuse	<i>Centaurea diffusa</i>	Noxious		May seriously reduce productive potential of infested rangelands.
Knapweed: Russian	<i>Acroptilon repens</i>	Noxious		Most distributed knapweed and most difficult to control. Inhibits growth in crop plants and other desirable plant species.
Knapweed: Spotted	<i>Centaurea maculosa</i>	Noxious		Reduces livestock and wildlife forage and increases surface water runoff, soil erosion, and stream sedimentation.
Loosestrife: Purple	<i>Lythrum salicaria</i>	Noxious		Quickly displaces native wetland vegetation and has the potential to cause a severe impact on wildlife. Roots of the plant can cause obstruction of water flow in ditches in canals.
Saltcedar	<i>Tamarix chinensis</i> <i>T. parviflora</i> <i>T. ramosissima</i>	Noxious		Displaces native vegetation by releasing salts to inhibit the growth of vegetation.
Spurge: Leafy	<i>Euphorbia esula</i>	Noxious		Contains milky latex which causes oral and digestive irritation in cattle. The plant also replaces desirable forage.
Thistle: Canada	<i>Cirsium arvense</i>	Noxious		Displaces desirable plant species and is unpalatable to livestock. Infestations decrease land value for crop production and grazing.
Thistle: Musk	<i>Carduus nutans</i>	Noxious		Corrupts pastures and reduces grazing in the vicinity.
Toadflax: Dalmatian	<i>Linaria genistifolia</i>	Noxious		Unpalatable to livestock and will flourish over native species.
Toadflax: Yellow	<i>Linaria vulgaris</i>	Noxious		Displaces existing plant communities and associated wildlife. Corrupts pasture lands and reduces grazing.
Wormwood: Absinth	<i>Artemisia absinthium</i>	Noxious		Reported to contaminate the milk produced by cattle. Species inhibits growth of desirable forage.

B.5 (b) Wildlife

Wildlife surveys utilizing a 1-mile-wide corridor were performed along the 42.5-mile New Town Pipeline route in Mountrail County during May of 2014. Keitu environmental field surveyors conducted a thorough inspection of private lands consisting of prairies, cropland, rangeland, and wetland environment.

Common wildlife identified in the survey area included 13-lined ground squirrel (*Spermophilus tridecemlineatus*), coyote (*Canis latrans*), mule deer (*Odocoileus hemionus*), northern leopard frog (*Lithobates pipens*), white-tailed deer (*Odocoileus virginianus*), white-tailed jackrabbits (*Lepus townsendii*), songbirds, migratory waterfowl, and raptors.

The following state-listed Species of Conservation Priority, U.S. Forest Service (“USFS”) Sensitive, and Bureau of Land Management (“BLM”) Sensitive species were identified during the biological field survey conducted in the New Town Expansion Project survey area in May of 2014: chestnut-collared longspur (*Calcarius ornatus*), golden eagle (*Aquila chrysaetos*), lark bunting (*Calamospiza melanocorys*), northern harrier (*Circus cyaneus*), northern leopard frog (*Lithobates pipiens*), northern pintail (*Anas acuta*), prairie falcon (*Falco mexicanus*), and Sprague’s pipit (*Anthus spragueii*). The following state-listed Species of Conservation Priority, USFS Sensitive, and BLM Sensitive were identified within the New Town Pipeline construction ROW: bobolink (*Dolichonyx oryzivorus*), grasshopper sparrow (*Ammodramus savannarum*), sharp-tailed grouse (*Tympanuchus phasianellus*), Swainson’s hawk (*Buteo swainsoni*), upland sandpiper (*Bartramia longicauda*), and Wilson’s phalarope (*Phalaropus tricolor*). Findings are reported on the appropriate plate in Appendix 4.B in Tab 4, as well as electronically presented as ESRI ArcGIS software compatible data files in Tab 7.

Construction of the New Town Pipeline had no significant effects on the State Sensitive Species for North Dakota. No significant effects are anticipated for construction of proposed above ground facilities for the New Town Expansion Project. Based on the size and location of the New Town Pipeline and the proposed New Town Expansion Project, the New Town Expansion Project’s effect on habitats is not anticipated to alter a species population.

B.5 (c) Raptors

An aerial raptor survey was conducted in the spring of 2013 to locate any raptors, as well as suitable raptor nests. The survey methods for the 2013 survey followed the USFWS technical guidance on inventory and monitoring protocols. Three surveyors (seated in rear-left, rear-right and front-left positions of the helicopter) thoroughly examined the area within the 2-mile-wide survey area along the ROW to locate currently active or inactive raptor nests. Complete coverage of the ROW was obtained by traversing the ROW centerline in a perpendicular manner while visually scanning all areas of potential nesting habitat, to provide complete coverage of the 2-mile-wide survey area. A second pass was conducted in a similar manner in the opposite direction to get full field of view and line of sight in all possible raptor nest locations.

When a possible nest was discovered, the helicopter would slow to a hover at a distance great enough to prevent flushing and for the shortest amount of time needed to determine the condition, type of nest, contents, and obtain accurate GPS location coordinates. Cliffs and rocky outcrop areas were identified along the New Town Pipeline route that may be suitable future nesting sites for golden eagles (*Aquila chrysaetos*) and ferruginous hawks (*Buteo*

regalis), among other cliff nesting species. Nesting habitat along the survey area included shelterbelts, cliff edges, deciduous forests, and riparian areas.

Conducting the survey in the early spring allowed for locating nests in deciduous trees before “leaf out” occurred. Heavily wooded areas are within the survey area and multiple passes were taken when necessary. Only nests large enough to support raptors were recorded during the survey.

The North Dakota raptor species of concern detailed by the North Dakota Natural Heritage Inventory System (“NHI”) with potential to be located in Mountrail County include the following: golden eagle (*Aquila chrysaetos*), Swainson’s hawk (*Buteo swainsoni*), merlin (*Falco columbarius*), prairie falcon (*Falco mexicanus*), and the burrowing owl (*Athene cunicularia*).

The following state-listed Species of Conservation Priority, USFS Sensitive, and BLM Sensitive species were identified in the New Town Expansion Project survey area during the aerial raptor survey conducted in the spring of 2013: golden eagle (*Aquila chrysaetos*) and prairie falcon (*Falco mexicanus*).

Even though raptors of concern were spotted during the survey, due to the range of these raptors it is not uncommon for one to be seen at a distance greater than one mile from their nests, making it quite probable that the raptor species of concern seen during the survey were in fact nesting outside the survey area. A total of seven potential usable raptor nests were observed during the aerial survey. While it is impossible to say with certainty that eagles will not occupy the recorded empty nests, based on the size of the discovered unoccupied nests it would be improbable. Findings are reported on the appropriate plate in Appendix 4.B in Tab 4, as well as electronically presented as ESRI ArcGIS software compatible data files in Tab 7.

B.6 Cultural Resource Studies

Beaver Creek Archaeology (“Beaver Creek”) of Bismarck, North Dakota was engaged to review existing site file data maintained by the North Dakota State Historic Preservation Office (“SHPO”) to determine if any portion of the New Town Pipeline route was surveyed previously for cultural resources.

A Class III Cultural Resource Inventory was conducted on the New Town Pipeline between May and September of 2013 and in June and July of 2014. A report was issued in January 2015. A total area of 1,845 acres was inventoried for the New Town Pipeline, using a variable 250 to 1,414 foot-wide survey corridor. The Class III Cultural Resources Inventory report prepared by Beaver Creek Archaeology is included in this application under Tab 4, Appendix A.

During the cultural resource inventory, Beaver Creek archaeologists identified 28 previously unrecorded cultural resources and 23 previously recorded cultural resources. Cultural resources include 34 Native American stone feature sites, four Archaeological Historic sites, four Architectural sites, eight cultural material scatter Site Leads, and one Isolated Find. Due to cultural resources within the survey area, a plan of avoidance was proposed, and as long as this was followed, Beaver Creek recommended a finding of *No Adverse Effects* for the New Town Pipeline.

The Native American stone feature sites were recommended potentially eligible for the National Register of Historic Places (“NRHP”), and Beaver Creek recommended that the sites be

avoided. The sites needed to be avoided by a minimum of 50 feet (from the site boundary); however, the sites located on the Fort Berthold Indian Reservation needed to be avoided by a minimum of 75 feet (from the site features). For sites located on the Fort Berthold Indian Reservation, Beaver Creek recommended that construction activities stay within the existing pipeline disturbance for this segment, due to their close proximity. The existing disturbed area corridor is 61 feet in width. Temporary fencing along the site boundary in conjunction with site monitoring during construction minimized any adverse effect to the site. No avoidance was necessary for site 32MN562, as the site has been destroyed by a previous pipeline project.

The four Archaeological Historic sites and four Architectural sites were recommended not eligible for the NRHP. No avoidance was recommended for these sites for the New Town Pipeline; however, avoidance via boring was recommended for site 32MN818, as it is an active railroad.

The previously recorded Isolated Find was not relocated during the cultural resources inventory. Isolated Finds are recommended not eligible for the NRHP, so no avoidance was necessary. During the pedestrian survey, no evidence of the Site Leads was observed within the New Town Pipeline area.

Beaver Creek recommended that unevaluated/potentially eligible sites within 100 feet of the survey area have temporary site buffer fencing and monitoring during construction around these sites. No avoidance was necessary for ineligible sites within or near the survey area. Furthermore, Beaver Creek recommended that the "Unanticipated Discovery Plan" created by Keitu Engineers and Consulting, Inc. and approved by SHPO be used during all construction phases of the New Town Expansion Project.

Provided that the sites listed were avoided by the recommendations of boring, avoidance, site buffer fencing, and monitoring, Beaver Creek recommends that the New Town Pipeline proceed under a finding of *No Adverse Effects* as surveyed, mapped, and described herein.

Proposed construction for the New Town Expansion Project will occur on previously disturbed areas.

The cultural resource location details are not publicly available per request of the North Dakota State Historic Society, but Beaver Creek has provided a redacted version of the report to be available for this application. General locations of cultural resource sites are included in Tab 4, Appendix 4.B.

The SHPO has been provided with a complete version of the Class III Cultural Resource Inventory report issued by Beaver Creek. A letter of concurrence with a finding of "No Significant Sites" was received from SHPO dated February 4, 2015.

B.7 Land Use

Specific to the New Town Expansion Project area, agricultural production is the predominant land use. Approximately 54 percent is cropland or pasture, 35 percent is native rangeland, 7 percent is developed, and 3 percent is forest, shrub, or wetland. The New Town Expansion Project is not located within any city limits or urban areas.

The primary crops cultivated in the area include wheat, grain, and alfalfa. The New Town Pipeline resulted in temporary impacts to agricultural land use. Landowners were compensated for crop loss or reduced yields caused by construction of the New Town Pipeline. No permanent crop loss occurred. Deep tillage was implemented as necessary to mitigate effects of soil compaction.

The New Town Pipeline route runs in the vicinity of, and sometimes adjacent to, existing oil well sites. Although developers will have to abide by state and/or local ordinances and easement restrictions, future residential developments will not be precluded by the New Town Pipeline. After installation of the pipeline, disturbed areas were restored to pre-construction conditions to the extent reasonably practicable, and generally reverted to pre-construction uses. No long-term change in land use occurred as a result of New Town Pipeline construction. Construction of the New Town Receipt Station resulted in conversion of 5 acres of agricultural land to industrial land. Since the proposed construction associated with the New Town Expansion Project will occur within existing surface facilities and pipeline ROW, no long-term change in land use is anticipated for the proposed New Town Expansion Project. Soil impacts associated with construction will be mitigated with the use of industry standard BMPs to minimize dust and erosion and prevent offsite sediment migration.

B.8 Water Resources

B.8 (a) Water Resources-Ground Water

The New Town Expansion Project lies in the Missouri River Basin, which is one of the five major hydrologic subdivisions in North Dakota. The Missouri River Basin is the largest in the state and drains approximately 48 percent of the state's total area. With respect to the ground water used in the basin, 69 percent is used for irrigation, 14 percent is used for livestock, 7 percent is used for industrial, 6 percent is used for municipal, 3 percent is used for rural domestic, and 1 percent is used for rural water systems/other.⁶

Groundwater in North Dakota occurs within bedrock or unconsolidated deposits. Bedrock aquifers underlie the glacial drift aquifers (aquifers in unconsolidated deposits). There are 9 Aquifer systems within the New Town Expansion Project study area that contain suitable water. Water from rocks of Pre-Cretaceous Age and the Dakota Group of the Cretaceous System would not be suitable for most purposes.

The aquifer of the Late Cretaceous Age is Fox Hills and basal Hell Creek aquifer system (bedrock aquifer) and its suitable uses include domestic, livestock, and industrial. The median dissolved solids concentration is about 1325 milligrams per liter. The estimated yield from this aquifer system is around 2 gallons per minute and due to geology yields as high as 60 gallons per minute should not be obtainable. The Mountrail County ground water study found the top of the aquifer ranging from about 1,450 to 2,100 feet below land surface. The Fox Hills-Hell Creek aquifer would yield small quantities of water to wells in most of Mountrail County and data is not sufficient to determine transmissivity.

⁶ North Dakota State Water Commission, *A Reference Guide to North Dakota Waters* (2014), available at <http://www.swc.nd.gov/4dlink9/4dcgi/GetSubCategoryPDF/136/WaterRefGuide.pdf>.

The aquifers of Tertiary Age include the Ludlow Aquifer System and Tongue River Aquifer System (bedrock aquifers). The Ludlow Aquifer System can be used for domestic and livestock. It underlies Mountrail County at depths between 822 and 990 feet. The median dissolved solids concentration is about 1,750 milligrams per liter. Estimated yield from this aquifer system is 25 gallons per minute and the water type is Sodium bicarbonate.

Mountrail County studies do not differentiate between Tongue River and Sentinel Butte Formations. This aquifer is used for domestic and livestock. The median dissolved solids concentration is about 1,830 milligrams per liter. The estimated yield from this aquifer is 25 gallons per minute and the water type is Sodium Bicarbonate. The Mountrail County study does note that Tongue River and Sentinel Butte Formations vary greatly in thickness. Most sand beds are less than 10 feet thick, but thicknesses exceeding 100 feet do occur. Sand units that are as thick as 100 feet may have transmissivities as high as 5,000 gallons per day per foot. Most sand lenses are thin and the transmissivity is low indicating that the aquifer transmissivity is less than 700 gallons per day per foot.

The glacial drift aquifers within the New Town Expansion Project study area of the Quaternary age include the New Town, White Earth River Valley, Shell Creek, and Little Knife River aquifers in Mountrail County. The New Town Aquifer has the highest potential of public use as it is recharged from Lake Sakakawea, has high yield, and requires little to no treatment. The 2 mile wide buried channel was one of the early Missouri River cuts.

Groundwater information came from County Ground Water Studies.⁷ The following tables summarize Aquifer information.

No sub-surface injection of water is expected for the New Town Expansion Project. Any released water will be discharged to surface water, subject to the requirements of the general National Pollutant Discharge and Elimination System (“NPDES”) permit issued by the North Dakota Department of Health (“DOH”).

Neither New Town Pipeline construction nor proposed construction of the New Town Expansion Project is expected to impact North Dakota ground water quality.

⁷ C.A. Armstrong, *Ground Water Resources of Burke and Mountrail Counties*, North Dakota Geological Survey Bulletin 55, part III, and North Dakota State Water Conservation Commission County Ground Water Studies 14, part III, p. 86 (1971).

TABLE 3.B.5 – New Town Expansion Project Study Area Aquifer Information

Aquifer Name	Area (sq mi)	Depth (ft)	Re-Charge (In/Yr)	Estimated yield (gpm)	Water Type	Median dissolved solids (ppm)
New Town	2 miles wide	Varies	No Data	150-450	NaHCO ₃	980 - 1380
White Earth River Valley	20	14	2.3	350	Na ₂ SO ₄	2870
Shell Creek	No Data	Varies	No Data	25-100	NaHCO ₃	1800 - 3000
Little Knife River Valley	No Data	Varies	No Data	80-100	NaHCO ₃	1900
Fox Hills and Hell Creek	No Data	1100 - 2100	No Data	100	NaHCO ₃	1325 - 1530
Tongue River	No Data	140 - 800	No Data	25-50	NaHCO ₃	1830
Sentinel Butte - Tongue River	No Data	Varies	No Data	25	NaHCO ₃	490 - 3870
Ludlow- Tongue River	No Data	500 - 990	No Data	25	NaHCO ₃	1750
Dakota Group	No Data	1600-3000	No Data	250	NaCl	4000 - 12000
Fort Union	No Data	<100	No Data	3-25	NaHCO ₃	2000 - 4000

“No Data” indicates not enough information for the aquifer in Mountrail County is available to make a determination.

* North Dakota Department of Health —Ground Water-Aquifer Monitoring—Table B-7 North Dakota Geographic Targeting System Scoring All Aquifer Data Listed by Aquifer Name 09/05/96, *available at* <http://www.ndhealth.gov/wq/gw/pubs/gwt.htm>; County Ground Water Studies, *available at* <http://www.swc.nd.gov/4dlink9/4dcgi/GetSubCategoryRecord/Reports%20and%20Publications/County%20Ground%20Water%20Studies>.

TABLE 3.B.6 – New Town Expansion Project Study Area Well Information

Aquifer	Number of wells by type in Pipeline area						
	Domestic	Stock	Municipal	Industrial	Irrig.	Prod.	Unknown
Glacial Drift Aquifers: Mountrail County							
New Town	1	0	3	0	0	0	0
White Earth River Valley	(no data)	(no data)	(no data)	(no data)	(no data)	(no data)	(no data)
Shell Creek	0	1	1	2	1	1	0
Little Knife River Valley	0	0	1	0	0	0	0
Bedrock Aquifers: Mountrail County							
Fox Hills- Hells Creek	0	1	1	0	0	0	0
Tongue River	2	1	0	0	0	0	0
Sentinel Butte-Tongue River	12	1	3	14	0	0	0
Ludlow-Tongue River	0	0	0	0	0	0	0
Dakota Group	0	0	0	0	0	0	0
Fort Union	19	5	2	2	0	1	0

* North Dakota State Water Commission, Ground and Surface Water Data Query, *available at* <http://www.swc.state.nd.us/4dlink2/4dcgi/wellsearchform/Map%20and%20Data%20Resource>.

B.8 (b) Surface Waters

Topographic maps and current aerial photos were reviewed to identify streams, rivers, and lakes crossed by the New Town Pipeline route (see Table 3.B.7). New Town Pipeline construction near surface waters was conducted in accordance with applicable regulatory requirements. No creek was permanently drained or filled as part of the construction for the New Town Pipeline, and effects on creeks were short-term and minor. Following construction of the New Town Pipeline, Hiland restored the construction ROW as close to pre-existing contours as practicable.

Proposed construction of above ground facilities for the New Town Expansion Project is not anticipated to impact surface waters. The BMPs utilized for soil protection during construction will also help protect the water quality of the nearby wetlands, intermittent stream channels, Lake Sakakawea, and the public drinking water intakes in Lake Sakakawea. Lake Sakakawea is impaired for methylmercury, which will not be affected by this project. To minimize potential impact to surface waters during operations, the facility will be operated in compliance with all applicable regulations, permits, and plans.

B.8 (c) Wetlands

Hiland, through its consultants, conducted a desktop survey using aerial photographs and USGS topographic maps identifying US Corps of Engineers waters of concern within North Dakota to identify wetlands along the New Town Pipeline route. Wetlands were identified within the New Town Pipeline's ROW and are listed by legal description in Table 3.B.7.

All wetland crossings identified along the route were bored, which eliminated the risk of wetland impact during construction of the New Town Pipeline and also eliminated the need for mitigation. No wetland impacts occurred during construction of the New Town Pipeline. The New Town Receipt Station was located to avoid wetland impacts. Proposed construction of facilities for the New Town Expansion Project will not occur within wetlands and appropriate BMPs will be used to prevent impacts to nearby wetlands.

B.8 (d) Water Use

Following construction of the New Town Pipeline, drains, swales, and flowages were restored to pre-construction conditions to the extent practicable to minimize disruption of water resources. Construction of the New Town Pipeline required temporary appropriations of water for use in the hydrostatic testing of the newly installed gathering pipeline. However, the majority of the water used for hydrostatic testing was purchased from freshwater wells and transported to testing sites. Similar procedures will be used for hydrostatic testing of new equipment and piping during construction of the proposed New Town Expansion Project.

TABLE 3.B.7 – New Town Pipeline Wetland and Waterbody Crossings

Name	Length of Bore (ft)	Location	Trees Established
Mountrail County			
Drainage to Missouri River	200	NESE S21 T152N R92W	No
Drainage	150	NENW S15 T152N R92W	No
Un-named tributary of Little Knife River	157.65	NWNE S28 T153N R92W	Yes
Un-named tributary of Little Knife River	206	SWSW S21 T153N R92W	No
Un-named tributary of Little Knife River	160.5	SESE S20 T153N R92W	No
Un-named tributary of Little Knife River	156.45	SESE S20 T153N R92W	No
Drainage to Little Knife River	166.2	SWSE S20 T153N R92W	No
Drainage to Little Knife River	468	SWSW S20 T153N R92W	Yes
Drainage to Little Knife River	175	SWSW S20 T153N R92W	Yes
Little Knife River	159.82	NENW S30 T153N R92W	Yes
Drainage to Little Knife River	242.4	NENW S24 T153N R93W	No
Drainage to Little Knife River	379	NWNW S24 T153N R93W	Yes
Un-named tributary of Little Knife River	174.7	SWNW S13 T153N R93W	No
Drainage to Little Knife River	300	NENE S14 T153N R93W	No
Drainage to Little Knife River	150	NENW S14 T153N R93W	No
Un-named drainage to Missouri River	200	SESE S4 T153N R93W	Yes
Un-named drainage to Missouri River	200	NENW S4 T153N R93W	Yes
Drainage to Missouri River	154.34	NENE S5 T153N R93W	Yes
Drainage to Missouri River	165.4	NWNW S5 T153N R93W	Yes
Fresh Water Pond	247.8	NWSE S18 T154N R93W	No
Fresh Water Pond	299	SWNE S18 T154N R93W	No
Freshwater Emergent Wetland	379	SESW S1 T154N R94W	No
Freshwater Emergent Wetland	390	SESW S1 T154N R94W	No
Fresh Water Pond	366	SWSW S19 T155N R93W	No
Fresh Water Pond	463	NESE S7 T155N R93W	No
Drainage to White Earth River	213.3	NESE S6 T155N R93W	Yes
Drainage to White Earth River	159.67	NESE S32 T156N R93W	No

B.8 (e) Water Runoff from Surfaces

Much of the New Town Expansion Project study area is level or only gently sloping, which limits the potential for runoff effects.

During construction of the existing pipeline, Hiland complied with the DOH NPDES general permit for Storm Water Discharges associated with Construction Activity and the associated Storm Water Pollution Prevention Plan to prevent and minimize construction-related effects of the New Town Pipeline on surface waters.

Hiland obtained authorization under a general permit for Storm Water Discharges Associated with Construction Activity from the North Dakota Department of Health, which implements a federal program under the Clean Water Act. Hiland's EMP describes best management practices. Hiland, its General Contractor, and New Town Pipeline subcontractors implemented measures to minimize off-site erosion from site storm water runoff. These practices protected surface water and soil resources within the New Town Pipeline ROW. Hiland's EMP was included in the construction specifications for the New Town Pipeline and enforced by one or more environmentally trained construction inspectors during construction. Because the ROW was restored to pre-construction conditions following New Town Pipeline construction, runoff from the pipeline ROW following construction generally reflects surrounding land use.

Although the construction of the proposed New Town Expansion Project will be exempt from such permitting under the new DOH permit, Company procedures require the use of appropriate BMPs to prevent and minimize erosion and sediment migration. For the surface facilities, Hiland will implement appropriate stabilization measures to control runoff.

B.8 (f) Discharges to Surface Waters

During construction of the New Town Pipeline, point source wastewater discharge was generated from hydrostatically testing the new gathering pipeline prior to placing it in service. Discharges also occurred as needed for trench dewatering during construction. The North Dakota Department of Public Health has developed a General Permit (Permit No. NDG-070000) which authorizes the discharge of waters related to temporary dewatering and hydrostatic testing. Hiland obtained authorization for construction-related discharges and conducted trench dewatering and hydrotest water discharges in a manner consistent with the NPDES general permit.

Testing and discharge was consistent with past practices and experience. Discharges of hydrostatic test water typically are controlled discharges directly to the ground surface or occasionally into Waters of the State. Typically, water was purchased from freshwater wells. The NPDES permit specifies that discharge water must be free from process and other wastewater discharge.

If discharge of hydrostatic test water is required during installation of proposed facilities for the New Town Expansion Project, it will be permitted and performed in accordance with NPDES permits.

B.8 (g) Protection from Fuel Spills

Motorized construction equipment utilized for construction for the New Town Pipeline was powered by gasoline- or diesel- fueled engines. Fuel for construction vehicles was and will be used and stored consistent with regulations of the US Environmental Protection Agency set forth in 49 C.F.R. § 195.112 for areas with at least 1,320 gallons of aggregate storage capacity and/or consistent with the National Fire Protection Association Code 395 for storage and handling of petroleum-based fuels in isolated and/or remote areas.

If more than 1,320 gallons of oil storage occurs at one area, the contractor is required to prepare and implement an oil spill prevention, control, and countermeasure (“SPCC”) plan in accordance with 49 C.F.R. Section 195.112, including having the plan reviewed and certified as adequate by a registered professional engineer. The SPCC plan outlines required secondary containment measures to be installed around bulk storage containers (i.e., tanks and drums) as well as other oil-handling areas such as unloading and dispensing areas. The SPCC plan also describes response, containment, and cleanup measures. Training requirements of impacted employees are also outlined. Hiland utilizes an SPCC plan when necessary.

Storage of bulk fuels was prohibited within 100 feet of an open waterway or surface water during New Town Pipeline construction.

Contractors are required to provide trained personnel, appropriate equipment, and materials to contain and clean up spills of fuel, lubricating oil, or hydraulic fluid that result from equipment failure when working in or near wetlands or surface water bodies.

Similar equipment, materials, and precautions will be utilized for proposed construction of above-ground facilities for the New Town Expansion Project.

SECTION C SITING CRITERIA

C.1 Relative Value and Effects upon Each Criterion Including Location, Construction, and Operation of the Facility (N.D.A.C. § 69-06-05-01(2)(k))

In accordance with Section 49-22-09 of the North Dakota Century Code and Section 69-06-08-02 of the North Dakota Administrative Code, the New Town Pipeline route was developed after consideration of its impact on humans and the environment. Alternative routes or options, which are discussed in Section C.2 of the Application for Certificate of Corridor Compatibility, would not have been optimum and could have resulted in more significant impacts.

Underground pipeline installation minimizes potential impacts on human and animal welfare and aesthetics. Construction of the New Town Pipeline resulted in temporary disruption to the environment, but will not result in long-term negative impacts to the environment.

The construction for the New Town Expansion Project will occur on previously disturbed lands where facilities currently exist, and in locations where no protected plant or animal habitats or culturally relevant features exist. The proposed construction for the New Town Expansion Project will result in temporary disruption, with no long-term negative impacts expected.

A general analysis of the existing human and natural environment along the New Town Pipeline route and potential impacts of ROW preparation, construction practices, and operation and maintenance procedures for the New Town Expansion Project are included in Section B. The additional factors and criteria to be considered are discussed below.

C.2 Factors to be Considered in Evaluating Applications and Designation of Sites, Corridors, and Routes (N.D.C.C. § 49-22-09)

C.2 (a) Available Research and Investigations Relating to the Effects of the Location, Construction, and Operation of the Proposed Facility on Public Health and Welfare, Natural Resources, and the Environment

Record and database research relating to the effects of the location, construction, and operation of the New Town Expansion Project included (1) conducting a Class I Cultural Resource Inventory, (2) reviewing the Water Well Inventory maintained by the North Dakota State Water Commission, (3) utilizing the USFWS Wetlands Mapper, and (4) utilizing the NDGFD Wildlife Action Plan. In addition, site-specific information, such as the presence of occupied buildings, protected species and/or environmentally sensitive areas, was obtained during field studies conducted in August and September of 2013 and May of 2014. A Class III Cultural Resource Inventory was conducted in May through September of 2013 and June of 2014.

C.2 (b) The Effects of New Energy Conversion and Transmission Technologies and Systems Designed to Minimize Adverse Environmental Effects

The New Town Expansion Project does not include new energy conversion or transmission technologies. The New Town Pipeline design is consistent with existing pipeline technologies.

C.2 (c) The Potential for Beneficial Uses of Waste Energy from a Proposed Energy Conversion Facility

The New Town Expansion Project does not involve construction of an energy conversion facility.

C.2 (d) Adverse Direct and Indirect Environmental Effects which cannot be Avoided Should the Proposed Site or Route be Designated

Unavoidable adverse direct and indirect environmental effects for construction of the New Town Pipeline included temporary construction-related effects on vegetation, wildlife, agricultural operations, transportation, and noise levels, as described throughout the Route Application. However, since construction of the New Town Pipeline was completed (1) outside of the prime growing season when feasible and (2) on an accelerated timeline, impacts to agricultural operations were minimal and impacts to transportation were short-term. Impacts on vegetation and wildlife were also minimal. Vegetation was removed from the ROW prior to New Town Pipeline construction, and the area was restored and re-seeded following construction. Wildlife may have temporarily avoided the ROW during construction of the New Town Pipeline, but no long-term impacts are anticipated. Noise level increases were associated only with construction. In addition, Hiland implemented thorough mitigation measures to minimize construction-related impacts as described in its EMP presented as Tab 5 and Tab 6 in this consolidated application.

Proposed construction for the New Town Expansion Project will occur in previously disturbed areas within surface facilities and pipeline ROW. No additional environmental effects, other than short term construction impacts, are anticipated to result from the proposed construction for the New Town Expansion Project.

C.2 (e) Alternatives to the Proposed Site, Corridor, or Route which are Developed During the Hearing Process and which Minimize Adverse Effects

Desktop studies for portions of the study area and route, including a Class I archeology study and environmental database retrieval, were conducted by a North Dakota-based environmental consulting firm prior to New Town Pipeline construction. The route was modified prior to initial construction to avoid or minimize environmental, cultural resource, and socioeconomic impacts.

In addition, the New Town Pipeline route was selected based on voluntary landowner participation and landowner input regarding the specific location of the New Town Pipeline. The route is described in Section A and depicted in diagrams presented in Tab 4.

The proposed construction for the New Town Expansion Project will occur in previously disturbed areas where facilities currently exist and in locations where no protected plant habitats, animal habitats, or culturally relevant features exist.

C.2 (f) Irreversible and Irretrievable Commitments of Natural Resources Should the Proposed Site, Corridor, or Route be Designated

The New Town Pipeline and the New Town Receipt Station required minimal irreversible or irretrievable commitments of natural resources. Several oil field gathering systems and natural gas pipelines are located in the vicinity of the New Town Pipeline. Steel was utilized for the

pipeline, and petroleum fuel was required for construction equipment. The proposed New Town Expansion Project will utilize similar resources.

C.2 (g) The Direct and Indirect Economic Impacts of the Proposed Facility

Upon conversion and installation of interconnect facilities, the New Town Expansion Project will present an optimization of new and existing pipeline capacity to meet the need for additional liquid petroleum transportation to this region. The New Town Expansion Project will provide connections to both pipeline and rail facilities for bulk crude oil transportation options. Hiland's shippers support the New Town Expansion Project as an economical response to the need for additional mid-stream pipeline transport capacity.

Application of horizontal drilling technology and historically high crude oil prices have resulted in a resurgence of oil drilling activity in North Dakota. Unprecedented success has occurred in the Bakken oil formation, resulting in more than doubling of oil production in North Dakota in the last three years. A summary of annual crude oil production in the state is presented in Table 3.C.1, below.

TABLE 3.C.1 – Historical Oil Production in North Dakota⁸

Year	Total Crude Oil Production, Barrels	% Gain over 2010
2010	113.1 million	---
2011	153.0 million	35.3 %
2012	242.5 million	114.4 %
2013	313.2 million	176.9 %

Crude oil produced in North Dakota is generally shipped by pipeline to one of three market hubs: (1) Tesoro's Mandan, North Dakota refinery; (2) the Guernsey, Wyoming interconnection hub; and/or (3) the Clearbrook, Minnesota interconnection hub. Crude oil can also be transported by truck to Canada, and by rail directly to refineries or to East, West, and Gulf Coast markets. Conversion of the New Town Pipeline into a transmission line through construction of the New Town Expansion Project will provide producers with greater levels of access across the Market Center System into the Guernsey hub through enhanced access to the Double H Pipeline.

The "geographical market risk" of limited transportation options suffered by oil producers in the rapidly expanding crude oil production in northwestern North Dakota has caused millions of dollars per year in lost revenue. With constrained export capacity, local production lacks access to alternative markets, making it vulnerable to regional price swings.

⁸ U.S. Energy Information Administration, Crude Oil Production by State, North Dakota Field Production of Crude Oil, available at <http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MCRFPND1&f=A> (last visited March 2, 2015).

Over the past several years, the North Dakota Pipeline Authority has been working with producers and regional pipeline companies to address the issues surrounding the safe transportation of the surge in crude oil volume.

The purpose of the New Town Expansion Project is to provide “mid-stream” transportation alternatives for the expanding volumes of crude oil being produced in North Dakota and to facilitate efficient access to downstream takeaway markets. The conversion of the New Town Pipeline to a transmission line will also serve to displace trucking operations that seek to move barrels from New Town to Dore in order to access the Double H Pipeline and other takeaway pipelines to move barrels of crude oil towards Guernsey, Wyoming. The New Town Expansion Project will ultimately help bring North Dakota sweet crude to more markets in the United States, therefore allowing for a more competitive price.

The New Town Expansion Project will transport crude oil from Mountrail County to major crude markets via (1) Hiland’s Market Center System using a connection at the White Earth Injection Station; and (2) Dakota Plains Holdings Inc.’s Pioneer rail terminal in New Town, North Dakota.

The New Town Pipeline currently provides gathering services for producers seeking to move crude oil to points near the terminus of the New Town Pipeline near the New Town Terminal. Various take-away options for producers gathering production to the New Town Terminal include rail and pipeline facilities. With the Double H Pipeline recently becoming operational, producers now desire to use the Hiland Market Center System to move crude oil to Double H as a potential destination point, which is interconnected with the Market Center System at its most westerly point. This desire has created commercial demand for Hiland’s customers to use the New Town Pipeline to bring barrels of crude oil from the New Town Terminal and other nearby points into the Market Center System, to ultimate destination points at or near the Double H Pipeline. The conversion of the New Town Pipeline to a transmission line will facilitate the requirements of Hiland’s customers producing crude oil to move barrels of crude oil to westerly destination points on the Market Center System.

In addition to increasing the crude oil transmission capacity within North Dakota, the New Town Expansion Project will provide other benefits. For example, operation of the New Town Pipeline has already increased, and has the potential to further increase, the tax base of Mountrail County. Construction of the New Town Pipeline offered job opportunities during construction, which were partially filled with local contractors and/or personnel. Construction workers were hired for the pipeline construction from pipeline contractors, equipment contractors, suppliers, and regional testing firms. Forty to fifty percent of the labor force was hired from the regional labor pool. Further job opportunities will be available when the proposed New Town Expansion Project facilities are installed.

In addition, environmental consultants and construction inspectors were employed during New Town Pipeline construction and restoration. North Dakota-based consulting firms were selected to assist with the site selection and permitting process. Wages paid to non-local contractors and/or personnel benefit the regional economy through expenditures for supplies, lodging, fuel, and other services. Similar workforce will be used for proposed construction for the New Town Expansion Project.

Materials for proposed New Town Expansion Project construction are expected to be obtained from U.S. and North American suppliers. Many of the materials and equipment needed for

proposed construction, including welding supplies, heavy equipment, electrical components, and building materials will be supplied from this region.

C.2 (h) Existing Plans of the State, Local Government, and Private Entities for Other Developments at or in the Vicinity of the Proposed Site, Corridor, or Route

Over the past several years, the North Dakota Pipeline Authority has been working with producers and regional pipeline companies to address issues surrounding the safe transportation of crude oil produced in the state. A report titled, "The Williston Basin: Greasing the Gears for Growth in North Dakota" prepared by Bentek Energy, LLC under funding from the North Dakota Pipeline Authority, provides an update regarding the State's current and forecasted production and projected infrastructure needs. The 129-page report released July 25, 2012 highlights that oil production from the Williston Basin, which includes the Dakotas and Montana, soared more than 400% in the 5 years prior to 2012. Oil production from the Williston Basin is expected to continue to grow until 2025. Bentek Energy, LLC also speculated that planned refinery and pipeline projects will not be sufficient to keep up with the increased production. Producers will therefore continue to utilize more expensive transportation options until additional pipeline capacity is available.⁹ A report excerpt on crude oil alternatives is presented as Appendix A in Tab 2.

Paradigm Midstream Services - ND, LLC and Phillips 66 Partners plan to construct a 70-mile pipeline and other facilities to transport crude oil from Johnson's Corner in McKenzie County, North Dakota, to Stanley Station in Mountrail County, North Dakota with connections to Dakota Plains Holdings, Inc.'s Pioneer crude oil rail terminal located in New Town in south Mountrail County, North Dakota. The pipeline will also tie into Enbridge Pipeline's station located near Stanley in north Mountrail County. That interconnection will allow access to all of Enbridge North Dakota's existing pipeline, as well as the Sandpiper Pipeline currently under construction. Enbridge also operates a crude oil rail terminal at Berthold. The intrastate pipeline and its interconnections to rail terminals and other pipeline systems will provide access to multiple refinery markets throughout the United States.

Energy Transfer Partners/Phillips 66 Partners is expecting to build the 1,100 mile long Dakota Access Pipeline to move crude oil from North Dakota to Patoka, Illinois. The pipeline, with an initial capacity of 320,000 barrels per day and expandable to 575,000 barrels per day, will allow shippers to access markets in the Midwest, East Coast, or Gulf Coast in addition to a new rail terminal planned in Illinois. The 16-inch to 30-inch diameter pipeline is expected to begin operation in 2016. The pipeline will originate near Stanley in Mountrail County, loop west along the north side of Lake Sakakawea, and cross the Missouri River near Fort Buford. The pipeline will then transect McKenzie County, connecting to new terminal tankage at both Watford City and Johnson's Corner until it parallels the Northern Border natural gas pipeline corridor to exit the state to the southeast.

A letter was sent to the Mountrail County Auditor in connection with Hiland's Market Center System to gain information on planned developments within the vicinity of the New Town Expansion Project. An acknowledgement of the request was received from the Mountrail County Auditor's office, but no further comments have been received. No developments

⁹ Bentek Energy, LLC, "The Williston Basin: Greasing the Gears for Growth in North Dakota," July 25, 2012, pp. 35, 47.

conflicting with the New Town Expansion Project have been discovered as of the date of this application.

Due to recent and continued crude oil volume expansion in the state, utilization of the New Town Pipeline as a transmission line can be supported under current and foreseen economic conditions.

Hiland is not aware of any other existing plans by state, local government, or private entities with respect to any other planned development in the vicinity of the New Town Expansion Project's study area based on a review of publicly available documents. However, based on recent history, it is likely that expansion of crude oil and natural gas pipeline systems will continue to occur. No potential conflicts with any developments have been identified at this time.

C.2 (i) The Effect of the Proposed Site or Route on Existing Scenic Areas, Historic Sites and Structures, and Paleontological or Archaeological Sites

The Class III Cultural Resources Inventory report prepared by Beaver Creek Archaeology is included in this application under Tab 4, Appendix A. See Section B.6 of this application for further discussion on the findings of this survey.

Provided that the sites listed in the Class III Cultural Resources Inventory Report were avoided by the recommendations of boring, avoidance, site buffer fencing, and monitoring, Beaver Creek recommends that the New Town Pipeline proceed under a finding of *No Adverse Effects* as surveyed, mapped, and described herein.

Because the proposed New Town Expansion Project construction will be limited to existing surface facilities and previously disturbed pipeline ROW, construction will not affect any cultural resource sites identified by Beaver Creek.

The cultural resource location details are not publicly available per request of the North Dakota State Historic Society, but Beaver Creek has provided a redacted version of the report to be available for this application. General locations of cultural resource sites are included in Tab 4, Appendix 4.B.

The SHPO has been provided with a complete version of the Class III Cultural Resource Inventory report issued by Beaver Creek. A letter of concurrence with a finding of "No Significant Sites" was received from SHPO dated February 4, 2015.

C.2 (j) The Effect of the Proposed Route on Areas which Are Unique Because of Biological Wealth or Because They are Habitats for Rare and Endangered Species

The following state-listed species of concern was identified during the biological field survey conducted in the New Town Expansion Project survey area in May of 2014: Hooker's townsendia (*Townsendia hookeri*). No species were identified within the New Town Pipeline construction ROW. No federally threatened or endangered species were identified within the construction ROW. Findings are reported on the appropriate plate in Appendix 4.B in Tab 4, as well as electronically presented as ESRI ArcGIS software compatible data files in Tab 7.

The following animal state-listed Species of Conservation Priority, USFS Sensitive, and BLM Sensitive Species were identified during the biological field survey conducted in the one-mile-wide environmental survey corridor in May, June, July, August, and September of 2013, and May of 2014: chestnut-collared longspur (*Calcarius ornatus*), golden eagle (*Aquila chrysaetos*), lark bunting (*Calamospiza melanocorys*), northern harrier (*Circus cyaneus*), northern leopard frog (*Lithobates pipiens*), northern pintail (*Anas acuta*), prairie falcon (*Falco mexicanus*), and Sprague's pipit (*Anthus spragueii*).

The following animal state-listed Species of Conservation Priority, USFS Sensitive, and BLM Sensitive Species were identified within the construction ROW: bobolink (*Dolichonyx oryzivorus*), grasshopper sparrow (*Ammodramus savannarum*), sharp-tailed grouse (*Tympanuchus phasianellus*), Swainson's hawk (*Buteo swainsoni*), upland sandpiper (*Bartramia longicauda*), and Wilson's phalarope (*Phalaropus tricolor*).

Findings are reported on the appropriate plate in Appendix 4.B in Tab 4, as well as electronically presented as ESRI ArcGIS software compatible data files in Tab 7.

The limited populations of sensitive plant species occurred along the New Town Pipeline construction ROW, but in areas where the pipeline has already been installed. Although limited populations of sensitive animal species (but not unique habitat) were found within the construction ROW, Hiland's environmental consultants have concluded that construction of the New Town Pipeline had no significant effect on unique areas of biological wealth or habitats for rare and endangered species. No significant effects on unique areas of biological wealth or habitats for rare and endangered species are anticipated for proposed construction for the New Town Expansion Project.

C.2 (k) Problems Raised by Federal Agencies, Other State Agencies, and Local Entities

No problems or concerns have been raised by federal agencies, state agencies, or local entities.

C.3 Exclusion Areas (N.D.A.C. § 69-06-08-02(1))

The Commission has identified certain sensitive or otherwise important environmental features that must be considered during the selection of a corridor and a route for transmission facilities. These features have been classified as either "Exclusion Areas" or "Avoidance Areas." As set forth in Section 69-06-08-02(1) of the North Dakota Administrative Code, Exclusion Areas are areas that are to be excluded from consideration for transmission facility routes, and may encompass only up to fifty percent of the width of a transmission facility corridor unless there is no reasonable alternative.

Two types of Exclusion Areas are located within the study corridor (see Table 3.C.2 below); however, no Exclusion Areas are crossed by the route, nor do any Exclusion Areas constitute more than 50% of the one-mile environmental study corridor width.

The Minot Air Force Base was contacted to verify there was no interference with intercontinental ballistic missile ("ICBM") launch or launch control facilities. The pipeline was intentionally set back one thousand two hundred feet from the geographic center of an ICBM launch or launch control facility.

No Exclusion Areas will be impacted by the construction of facilities for the New Town Expansion Project.

Appendix 4.B (see Tab 4) contains maps depicting Exclusion Areas within the one-mile-wide study corridor centered on the New Town Pipeline route. The New Town Pipeline route has been superimposed on both aerial photographic maps as well as USGS Quadrangle Topographic Maps.

TABLE 3.C.2 – Exclusion Areas

Exclusion Area	Within Study Area	Crossed By Route	Description of Exclusion Area and Proposed Buffer
Designated or registered national: parks; memorial parks; historic sites and landmarks; natural landmarks; monuments; and wilderness areas	None	None	
Designated or registered state: parks; historic sites; monuments; historical markers; archeological sites; nature preserves	None	None	
County parks and recreational areas; municipal parks; and parks owned or administered by other governmental subdivisions	None	None	
Areas critical to the life stages of threatened or endangered animal or plant species	Yes	None	As noted in Section B.5 (c), several raptor nests were identified within the 1-mile buffer zone suggested by the USFWS. However, construction will only occur in those areas outside of nesting season, and other recommendations offered by the USFWS will be followed.
Areas where animal or plant species that are unique or rare to this state would be irreversibly damaged	Yes	None	As noted in Section C.2 (j), one USFS sensitive species is within the study corridor, but well outside any proposed area of disturbance by construction activities. Although several sensitive animal species were found within the construction ROW, Hiland’s environmental consultants believe these species will not be irreversibly damaged.

Exclusion Area	Within Study Area	Crossed By Route	Description of Exclusion Area and Proposed Buffer
Areas within one thousand two hundred feet of the geographic center of an intercontinental ballistic missile (ICBM) launch or launch control facility	None	None	During initial installation, the pipeline was intentionally set back further from an ICBM facility in order to satisfy this criteria should the line need to comply as a transmission facility at some point in the future.
Areas within thirty feet on either side of a direct line between intercontinental ballistic missile (ICBM) launch or launch control facilities to avoid microwave interference.	None	None	

C.4 Avoidance Areas (N.D.A.C. § 69-06-08-02(2))

As set forth in Section 69-06-08-02(2) of the North Dakota Administrative Code, Avoidance Areas are areas that are not to be considered in the routing of a transmission facility unless it is shown that, under the circumstances, there is no reasonable alternative. Avoidance Areas may encompass only up to fifty percent of the width of a transmission facility corridor unless there is no reasonable alternative.

Two types of Avoidance Areas were identified within the study corridor (see Table 3.C.3 below). No Avoidance Areas were crossed by the New Town Pipeline route. Measures taken to minimize impacts are described further below.

Significant archeological sites within the survey area are summarized in Section B.6 and discussed in detail in the report in Tab 4 Appendix 4.A.

Nineteen rural residences and/or farmhouses were identified within 500 feet of the New Town Pipeline. The residences do not encompass more than fifty percent of the width of the corridor in any location. Hiland has obtained waivers from the owners of the affected residences pursuant to North Dakota Century Code Section 49-22-05.1. Conversion of the New Town Pipeline from a gathering to a transmission line will have no impact on operations near the residences.

No Avoidance Areas will be impacted by the construction of facilities for the New Town Expansion Project.

Appendix 4.B (see Tab 4) contains maps depicting Avoidance Areas within the one-mile-wide study corridor centered on the New Town Pipeline route. The New Town Pipeline route has been superimposed on both aerial photographic maps as well as USGS Quadrangle Topographic Maps.

TABLE 3.C.3 – Avoidance Areas

Avoidance Area	Within Study Area	Crossed By Route	Description of Avoidance Area and Proposed Buffer
Designated or registered national: historic districts; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; and grasslands	None	None	
Designated or registered state: wild, scenic, or recreational rivers; game refuges; game management areas; management areas; forests; forest management lands; and grasslands	None	None	
Historical resources which are not specifically designated as exclusion or avoidance areas	Yes	None	Significant archeological sites within the study corridor are summarized in Section B.6 and discussed in detail in the report in Tab 4 Appendix 4.A.
Areas that are geologically unstable	None	None	
Within five hundred feet [152.4 meters] of a residence, school, or place of business	Yes	None	Nineteen residences are within 500 feet of the pipeline. Waivers have been obtained from landowners.
Reservoirs and municipal water supplies	No	No	
Water sources for organized rural water districts	No	No	
Irrigated land	N/A	N/A	Not applicable for underground transmission facilities.
Areas of recreational significance which are not designated as exclusion areas	None	None	

C.5 Selection Criteria (N.D.A.C. § 69-06-08-02(3))

The North Dakota Administrative Code specifies several selection criteria to be considered in designating a transmission corridor or route. Specifically, the Commission considers whether adverse effects from the location, construction, and maintenance of the facility as they relate to the selection criteria will be at an acceptable minimum, and whether these effects will be managed and maintained at an acceptable minimum. Potential impacts, as they relate to each of the selection criteria, are discussed below. Measures Hiland has implemented for New Town Pipeline construction to minimize these impacts are noted below and discussed in greater detail in Section D. Measures Hiland will implement to minimize impacts for proposed construction of the New Town Expansion Project are also discussed.

C.5 (a) Agricultural Production

The New Town Pipeline was installed within a new ROW in Mountrail County in northwestern North Dakota. The pipeline crosses agricultural and pasture lands where crop and livestock

production are the primary economic activity. The primary crops cultivated in the area include barley, wheat, and alfalfa.

New Town Pipeline construction did result in temporary effects on agricultural land use. However, Hiland instituted appropriate management practices to restore all areas to pre-construction conditions, to the extent reasonably practicable.

Hiland required that construction equipment be cleaned before arriving on site to prevent the introduction of undesirable species to the surrounding New Town Pipeline ROW. Hiland implemented the following mitigation measures when undesirable species were found within the construction ROW:

- Hiland made an effort to prevent the spread of noxious weed seeds during clearing and grading activities, and used straw mulch and seed mix that are free of noxious weed seed to re-vegetate the ROW. Contractors and construction inspectors received information to help them identify noxious weeds. Hiland also provided training to its construction inspectors regarding identifying and preventing the spread of undesirable species.
- During pre-construction walkovers, Hiland's environmentally trained construction inspectors flagged and documented areas containing noxious weeds. The construction crews were informed of these areas. Hiland instructed the contractors to minimize the amount of construction equipment and limit the number of passes by this equipment through infested areas. Construction mats were used to minimize the transport of weed seed or plant material via construction equipment.
- Equipment and construction mats were cleaned immediately after passing through infested areas. Cleaning consisted of removing large soil clods and/or plant parts from the equipment and construction mats using shovels and brooms and, when necessary, washing the equipment with water or cleaning using compressed air. Soil and water from cleaning activities were not allowed to flow to non-infested areas.
- Final seeding was initiated within 24 hours of final grading, so long as there were appropriate weather and soil conditions, to prevent the establishment of noxious weed seeds that may have been present in the existing seed bed.

The proposed additions for the New Town Expansion Project will occur in previously disturbed areas where facilities and pipeline ROW currently exist. Hiland will continue to implement the above mitigation measures during proposed construction of the New Town Expansion Project when applicable.

The New Town Pipeline was installed at a depth that exceeds the typical tillage depth. Following construction, agricultural lands were returned to pre-construction conditions to the extent reasonably practicable. Therefore, the New Town Pipeline did not interfere with normal agricultural operations on cropland after construction. Construction operations were conducted after the harvest season and prior to the growing season when feasible. Therefore, minimal disruption to agricultural production occurred.

Above-ground facilities on cropland are limited to line markers, cathodic protection rectifiers, and test stations which can be sited within fence lines. Therefore, the New Town Pipeline

resulted in minimal long-term loss of farmland use. Hiland consulted with landowners to place above-ground appurtenances in areas that cause the least amount of disturbance to landowner operations. The construction of proposed facilities for the New Town Expansion Project will not affect farmland, as the new construction will be located on previously disturbed areas. Landowners have been compensated by either long-term lease agreements or by the purchase of the land for these sites.

Approximately 0.6 percent (2.4 acres) of the 386 acres of the New Town Expansion Project study area crosses prime farmlands, as classified by the Natural Resource Conservation Service (“NRCS”) (see Table 3.B.2). This total includes prime farmland and land that would be considered prime farmland if drained. Prime farmland is defined as land with the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. Construction activities did not significantly affect the factors, such as soil quality, growing season, or moisture supply, that are considered in determining whether land is prime farmland.

C.5 (b) Family Farms and Ranches

The New Town Pipeline does not alter the pattern of land ownership or create long-term disruptions to family farming operations. Easement payments are beneficial to landowners within the ROW and no significant interference with farming operations occurred. Equipment traversed only landowner-approved access routes to minimize disruption to soil, drainage, and crops. Hiland’s crop loss compensation program compensated landowners for any crop damage caused by construction. Hiland will also compensate landowners for crop damage that results from future pipeline maintenance and repairs.

Construction activity can cause short-term disruption of livestock operations and can inconvenience farm activities. Possible impacts include removal or damage of fences, gates, and private roads. Hiland worked to minimize construction interference for the New Town Pipeline, and will continue to do so with proposed construction for the New Town Expansion Project. Temporary access across the ROW was provided to allow for livestock and farm equipment movement, as needed. Temporary fences and gates were constructed as necessary to prevent livestock from entering into the construction zone. The New Town Pipeline was constructed in a timely manner and, upon completion, fences, gates, and roads were restored to pre-construction conditions, to the extent reasonably practicable. Proposed construction for the New Town Expansion Project is not anticipated to impact farms and ranches.

C.5 (c) Lands Suitable for Irrigation

Pursuant to Section 69-06-08-02(2)(h) of the North Dakota Administrative Code, this criterion does not apply to underground transmission facilities such as the New Town Pipeline and proposed New Town Expansion Project. No above-ground facilities will be constructed on irrigated land.

C.5 (d) Surface Drainage Patterns

Construction of the New Town Pipeline did not alter surface drainage patterns. Streams, swales, ditches, and other natural drains were restored to pre-construction contours after construction of the New Town Pipeline was complete. The pipeline was installed beneath drainage ditches in a manner that will not interfere with flow or future maintenance efforts by landowners or the

drainage authority. Drainage ditches were bored. Mitigation measures included the installation of the pipe at a sufficient depth to avoid being encountered by drain cleaning equipment. Existing above-ground facilities were constructed in a manner that prevents alteration of surface drainage patterns. Proposed construction of the New Town Expansion Project will also be designed to minimize alteration of surface drainage patterns.

C.5 (e) Groundwater Flow Patterns

Groundwater moves under the influence of gravity from areas of higher potential (recharge) to areas of lower potential (discharge). The rate of groundwater flow is indicated as only a few feet per year in the principal aquifers.^{10,11}

Information concerning groundwater is generally available in, or can be estimated from, North Dakota county groundwater resource studies. The groundwater flow patterns from aquifer systems in the New Town Expansion Project study area that contain suitable water are summarized as follows:

The White Earth River Valley and New Town Aquifers in Mountrail County vary in quality with types ranging from a very hard sodium sulfate or hard sodium bicarbonate in White Earth River Valley to a very hard sodium bicarbonate or sodium sulfate type in the New Town aquifer. Recharge to the New Town aquifer is from inflow from the undifferentiated Fort Union sediments and from Lake Sakakawea, which indicates a southeastward flow. Recharge to the White Earth River Valley aquifer is generally from the undifferentiated Fort Union group and discharge is mainly by seepage into the White Earth River, which flows southward to the Missouri River.

Further aquifer details are provided in Section B.8 (a) Water Resources-Ground Water.

Groundwater flow can potentially be altered by pipeline construction through blasting and trenching activities. However, no exposed bedrock or areas of shallow bedrock were encountered, therefore blasting was not done for New Town Pipeline construction, nor is it anticipated for proposed construction of the New Town Expansion Project. Trenching may have temporarily disturbed the level of groundwater and increased the sediment in the groundwater. However, given the shallow depth of construction activities for the pipeline, and the relatively deep location of the area's aquifers, installation of the New Town Pipeline did not have a significant effect on regional groundwater flow patterns.

Groundwater could have been affected by accidental discharges of regulated materials, such as fuel, lubricants, and coolants used during construction. Hiland's EMP located in Tab 5 and supporting diagrams in Tab 6 outline precautions that Hiland takes to prevent sedimentation or other materials from entering the water supplies in the area. New Town Pipeline construction contractors were required to have a current SPCC plan, which requires implementation if the facility contains an aggregate oil storage capacity above 1,320 gallons, consistent with U.S. Environmental Protection Agency requirements outlined in 40 C.F.R. 112. Regardless of the

¹⁰ M.G. Croft, *Ground Water Resources of McKenzie County, North Dakota*, North Dakota Geological Survey Bulletin 90, part III, and North Dakota State Water Commission County Ground-Water Studies 37, part III, p. 57 (1985).

¹¹ C.A. Armstrong, *Ground Water Resources of Burke and Mountrail Counties*, North Dakota Geological Survey Bulletin 55, part III, and North Dakota State Water Conservation Commission County Ground Water Studies 14, part III, p. 86 (1971).

total storage capacity, no bulk oil storage facilities will be sited within 100 feet of surface water in connection with the New Town Expansion Project.

C.5 (f) Impact on Noise Sensitive Land Uses

Nineteen residences are located within 500 feet of the New Town Pipeline. No other sensitive noise receptors, such as schools or hospitals, are located in the vicinity of the New Town Expansion Project. During construction of the New Town Pipeline, residences in close proximity to the construction experienced short-term increases in construction-related noise. The heavy construction equipment needed to construct the New Town Pipeline generated short-term increases in ambient noise levels. Increases in ambient noise levels due to heavy equipment operation were limited to the period of construction, typically during daylight hours. No significant noise is expected to be generated by the New Town Pipeline during normal operations.

Construction of the proposed New Town Expansion Project will be within or adjacent to existing surface facilities with similar land use. There are no residences located within 500 feet. The impact of construction noise will be minimized by performing routine construction activities during daylight hours. The operation of the plant will generate noise similar to the adjacent facility. No significant, long term noise is expected from construction or operation of the proposed New Town Expansion Project facilities.

C.5 (g) Impact on Visual Effect on the Adjacent Area

Current above-ground facilities that were constructed as part of the New Town Pipeline include mainline valves, line markers, cathodic protection equipment, and test stations. Mainline valves were sited at existing above-ground facility sites.

Proposed construction for conversion of the New Town Pipeline from a gathering line to a transmission line will occur at existing facilities with similar equipment. Other than these permanent above-ground facilities, the New Town Expansion Project impacts to visual effects will be limited to periods of construction activities.

C.5 (h) Impact on Extractive and Storage Resources

No extractive or storage resources were identified that would be affected by the New Town Expansion Project.

C.5 (i) Impact on Wetlands and Water Bodies

Impacts to water bodies for New Town Pipeline construction were avoided to the extent practicable in a manner compatible with safe operation, maintenance, and inspection of the pipeline. Efforts have been made and will continue to be made to restore all areas of disturbed wetland vegetation. No proposed facilities for the New Town Expansion Project will be constructed in wetland areas.

Waterbody crossings are described in Section B.8.

New Town Pipeline construction near water bodies was conducted in accordance with applicable regulatory requirements. No waterbody was permanently drained or filled as part of

the New Town Pipeline construction, and effects on water bodies were short-term and minor. Hiland restored the areas as close to the previous state and naturally functioning condition as possible.

Wetlands are typically bored. However, where wetlands were unsaturated, trenching may have been performed. For trenching through an unsaturated wetland, topsoil was segregated from the trench line during construction of the pipeline to preserve natural sources of seed and rootstock. During trenching, water quality of inundated wetlands adjacent to the construction area may have been temporarily affected due to the suspension of sediments and organic matter. Silt fence or straw bales were installed as needed to minimize this effect. Although wetland vegetation was cleared for New Town Pipeline construction, these areas were re-vegetated to their pre-construction contours and function. After the trench was backfilled, the topsoil was replaced to facilitate the natural re-vegetation process in unsaturated wetlands.

If required by the permitting agencies, wetlands may be re-vegetated with a temporary cover crop. No fertilizer or soil amendments were applied in wetlands.

The long-term operation and maintenance of the pipeline will not have adverse effects on wetland function or value.

Proposed construction of the New Town Expansion Project is not anticipated to impact wetlands.

C.5 (j) Impact on Woodlands and Wooded Areas

Construction for the New Town Pipeline crossed through tree rows and woody areas occurring as isolated islands or rows throughout the New Town Pipeline area. Impacts to trees were avoided to the extent practicable in a manner compatible with safe operation, maintenance, and inspection of the pipeline. It may have been necessary to clear some mature trees during construction; however, Hiland did and will continue to work with the appropriate state agencies and private landowners to determine appropriate replacement measures following construction.

While a pre-construction tree count was not conducted prior to construction for the New Town Pipeline, a North Dakota-based environmental consulting firm was engaged to estimate the number of trees likely impacted by New Town Pipeline construction. In accordance with the Commission's Specifications, a desktop review of and field visits to the New Town Expansion Project area were conducted in September of 2014 to determine the number and species of tree in each potential area that was impacted. Only trees 1-inch in diameter at breast height or greater were inventoried.

During the September 2014 tree inventory, a total of 857 individual trees and shrubs were estimated removed within the 75-foot construction corridor. Within the areas inventoried, two tree and four shrub species were identified. The tree and shrub inventory report is included as Appendix 4.F in Tab 4 of this Siting Application.

Construction of the New Town Expansion Project is not anticipated to require tree removal.

Hiland will satisfy the requirements of the Commission's tree and shrub mitigation specifications regarding replacement of trees and shrubs impacted by the proposed construction associated with the New Town Expansion Project.

C.5 (k) Impact on Radio and Television Reception, and Other Communication of Electronic Control Facilities

No impacts on television or radio reception, or communication or electronic control facilities, are anticipated to occur as a result of the New Town Expansion Project.

C.5 (l) Impact on Human Health and Human Safety

During New Town Pipeline construction, residences and businesses in close proximity to construction activities were exposed to short-term increases in construction-related noise and dust. The construction ROW and access roads near residential areas were watered down to control dust during construction in instances of excessive dust. After New Town Pipeline construction was completed, measures to stabilize and re-vegetate the ROW were promptly taken to prevent further dust emissions.

The heavy construction equipment needed to install the New Town Pipeline generated unavoidable short-term increases in ambient noise levels. Increases in ambient noise levels due to equipment operation were limited to the period of construction and were generally limited to daylight hours. No noise is generated by the New Town Pipeline during normal operations. Following installation, no additional significant noise is expected to be generated by the operation of above ground facilities during normal operations. Similar, short term, impacts are expected for proposed construction of the New Town Expansion Project.

No residences or other occupied structures were razed due to New Town Pipeline construction. Construction of the pipeline may have temporarily restricted access to residences along the pipeline route. When this was the case, Hiland either limited the time such restrictions were in place or made arrangements to accommodate the landowner's access needs. Although developers will have to abide by state and/or local ordinances and easement restrictions, future residential developments are not precluded by the New Town Pipeline.

Other than normal construction impacts, no long term impacts to human health and safety are anticipated from the proposed New Town Expansion Project construction activities.

Causes of and Prevention of Accidents on Pipelines

The major causes of pipeline leaks in the United States are corrosion (both internal and external), excavation damage, pipe or weld failure, incorrect operations, or natural causes (e.g., floods or outside force). To prevent these categories of failures, Hiland has constructed and will maintain the New Town Pipeline to meet or exceed industry and governmental requirements and standards. Specifically, the steel pipe utilized meets US DOT Pipeline and Hazardous Material Safety Administration ("PHMSA") federal codes under 49 C.F.R. Part 195 (referred to hereafter as PHMSA regulations), and construction methods followed standards issued by the American Society of Mechanical Engineers, National Association for Corrosion Engineers and API. As a safety measure, the pipeline is designed to withstand pressures over and above its normal operating pressures and will operate according to all applicable laws, rules, and regulations. All pipe was inspected and integrity-tested at the factory and transported per the highest technical standards. All pipe was manufactured with fusion-bonded epoxy coating to protect against corrosion. The actual installation of the pipeline and all construction and testing records were subject to inspection. Although PHMSA does not schedule field inspections on pipelines such as the New Town Pipeline under DOT 195, the pipeline complies with federal

regulatory PHMSA requirements, including the integrity testing of the pipeline through the use of internal inspection devices.

The New Town Pipeline was subjected to careful testing to verify integrity and compliance with specifications. PHMSA regulations require that at least 10% of the field welds be inspected using radiological (i.e., X-ray) and/or other non-destructive testing such as checking coating integrity. Hiland performed as near as possible to 100% X-ray inspections on girth-welded pipe. The percentage of welds inspected varied; however, the percentage of welds inspected never fell below the requisite 10%.

Additional inspections included internal inspection of the entire length of the New Town Pipeline using a tool known as a caliper pig, and hydrostatically testing the pipeline to determine the MOP. The pipeline was placed into service only after inspection to verify compliance with all construction standards and requirements.

The New Town Pipeline is maintained and inspected according to PHMSA regulations, industry codes, and prudent pipeline operating techniques. All of Hiland's pipelines are externally coated to resist corrosion, internally inspected at regular intervals using in-line inspection technology, and equipped with a cathodic-protection system to prevent external corrosion.

Hiland performs weekly aerial patrols on the pipeline. The Hiland System rights-of-way that are designated Class 1 are patrolled via foot patrol annually. Road crossings are inspected via foot patrol semi-annually. These inspections are to verify that no abnormal conditions or dangerous activities, e.g., unauthorized excavation, have taken place along the routes of the lines.

Hiland also conducts extensive public education and outreach programs that exceed industry (API Recommended Practice 1162) and PHMSA (49 C.F.R. § 195.440) requirements concerning public awareness of pipelines and pipeline safety. All Hiland pipelines are marked with signage and warnings, per federal regulations, at road and highway crossings, railroad crossings, navigable rivers, and other locations to alert the public to the presence of underground lines and to provide information, contact numbers, and emergency data.

Pipeline workers and contractors performing critical tasks are qualified under Occupational Safety and Health Administration safety standards and PHMSA "operator qualification" rules and are subjected to federal drug and alcohol testing requirements. Hiland meets, and often exceeds, these requirements so that human error in construction and operation is avoided.

Hiland's Ten-Year Pipeline Accident Record

Hiland Crude, LLC has had only three reportable incidents on its pipeline systems in North Dakota. On October 16, 2013, Hiland discovered a small leak while performing above-ground, routine maintenance on the right-of-way for its 4-inch, steel, underground crude oil gathering pipeline in Divide County, North Dakota. The affected section of the pipeline was immediately shut down, depressurized, and isolated.

Approximately 20 barrels of oil leaked in the immediate vicinity of the pipeline on company right-of-way land. Hiland identified the source to be a newly formed pinhole in the pipe, which was installed and commissioned in the first quarter of 2013. Hiland submitted the affected cross-section of the pipe to an independent laboratory to determine the cause of the pinhole.

Within an hour of learning of the leak, Hiland notified all appropriate regulatory agencies, completed a North Dakota spill report and filed a report with the National Response Center. Hiland also notified the Divide County Emergency Response Manager, the U.S. Fish and Wildlife Service, and the landowner the same day. Hiland performed on-site remediation until the area was restored. No injuries occurred as a result of the incident.

On March 20, 2014, Hiland representatives discovered that approximately 800 barrels of crude oil were released from secondary containment resulting from a flange gasket failure on a pipeline in McKenzie County. Within hours, Hiland notified all appropriate regulatory agencies, completing a North Dakota spill report and filing a report with the National Response Center. Hiland also notified the landowners the same day. Hiland performed on-site remediation until the area was restored. No injuries occurred as a result of the incident.

On November 2, 2014, Hiland discovered and reported a valve failure on an aboveground pipe, 8-inches in diameter, which resulted in the release of approximately 55 barrels of crude oil in Mountrail County. Once the leak was identified, the line was shut down and isolated. Hiland performed on-site remediation until the area was restored. No injuries occurred as a result of the incident.

C.5 (m) Impact on Animal Health and Safety

Construction activity within the New Town Pipeline ROW had temporary impacts on domestic animals and wildlife. The clearing of vegetation temporarily reduced cover, nesting, and foraging habitat for some species. However, species will generally move into adjacent habitats, away from the disturbance area. Once habitat alterations were reclaimed, wildlife reestablished within the area.

New Town Pipeline trenching activities and associated spoil piles resulted in a short-term barrier restricting the movement of some wildlife species (typically two to four weeks at any one area). Except for short-term interruptions during construction, existing public roads, farm lanes, and livestock crossings were kept open, providing crossing access for wildlife. During construction of the New Town Pipeline, Hiland erected temporary fencing, as necessary, to keep livestock and wildlife away from the pipeline trench, and minimize the length of time the trench was left open.

Any impacts to animal health and safety from the proposed construction of the New Town Expansion Project will be temporary in nature.

C.5 (n) Impact on Plant Life

Areas requiring removal of vegetation for New Town Pipeline construction were re-vegetated in accordance with applicable county agency standards and landowner requests. There were no permanent impacts to vegetation associated with pipeline construction. Special consideration was taken for known occurrences of sensitive populations and habitat which could potentially establish new sensitive populations within the New Town Expansion Project area.

As the proposed construction for the New Town Expansion Project will be located on previously disturbed areas, any impacts to plant life from proposed New Town Expansion Project construction will also be temporary in nature.

C.6 Policy Criteria (N.D.A.C. § 69-06-08-02(4))

The Commission may give preference to an applicant that will maximize benefits resulting from the adoption of policies and practices identified in Section 69-06-08-02(4) of the North Dakota Administrative Code. These policies, and the extent to which the New Town Expansion Project aligns with or reinforces these policies, are discussed further below.

C.6 (a) Location and Design

Hiland believes that the New Town Expansion Project utilizes an optimal alignment. No designated Exclusion Areas were crossed by the New Town Pipeline route.

Hiland engaged consultants before the construction of the New Town Pipeline to conduct environmental desktop studies and a Class I archeological study. The purpose of these studies is to avoid previously known plants, wildlife habitats, or cultural resources to avoid damage to these areas.

Construction of the New Town Pipeline included the installation of an 8-inch nominal diameter pipeline with a nominal wall thickness of 0.188 inches denoted as API Code 5LX specification X52/X42 pipeline pipe. The MOP is 1,440 psig. The valves installed are 8-inch ANSI 600, flange end by flange end, full port, rising stem gate valves. These valves were manufactured in accordance with API Standard 6D "API Specification for Steel, Gate, Plug, Ball and Check Valves for Pipeline Service." The MOP of the valves is 1,440 psig.

The steel pipe utilized for construction of the New Town Pipeline meets US DOT criteria outlined in 49 C.F.R. § 195.100. The New Town Pipeline was constructed as a gathering line per 49 C.F.R. § 195.200. Upon conversion to a transmission line, the New Town Pipeline will be operated and maintained per 49 C.F.R. § 195.400.

The New Town Pipeline is designed and operated in a manner that meets or exceeds state and federal engineering, safety, and operational design standards. Proposed construction of the New Town Expansion Project will also meet or exceed all standards.

C.6 (b) Training and Utilization of Available Labor in this State for the General and Specialized Skills Required

During construction of the New Town Pipeline, skilled and unskilled labor, both local and non-local, was employed by Hiland or by the general contractor(s) selected to construct the pipeline. Hiland has established a comprehensive orientation, technical, safety, emergency, and on-the-job training program that is in compliance with the Operator Qualification rules issued by PHMSA under 49 C.F.R. Part 195. As personnel progress in pipeline operation and maintenance positions, they receive hundreds of hours of formal and on-the-job training. Demonstrations of competence are shown through reviews of job performance, periodic pipeline control system simulations, emergency exercises, welding certification tests, and other functions required to continue safe pipeline operation and maintenance.

A similar construction workforce will be utilized for the proposed New Town Expansion Project construction.

C.6 (c) Economies of Construction and Operation

Utilization of the New Town Pipeline as a transmission line is believed to be the most cost-effective and operationally sound means of meeting Hiland's delivery obligations. Please also refer to Section C.2 (g) of this Application and Section C of the Application for a Certificate of Corridor Compatibility (Tab 1) for further discussion of economic impacts and alternatives.

C.6 (d) Use of Citizen Coordinating Committees

No Citizen Coordinating Committee is anticipated as a result of the New Town Expansion Project. Hiland does not believe that a Citizen Coordinating Committee is necessary for the New Town Expansion Project given the New Town Pipeline and associated facilities are located in an area of the state where crude gathering and transmission pipelines already exist. As such, the public is familiar with the permitting, construction, and operation of pipeline facilities.

C.6 (e) Commitment of a Portion of the Transmitted Product for Use in this State

The New Town Pipeline receives deliveries of crude oil produced in northwestern North Dakota. This market flexibility is critical to assure the best overall value is obtained for North Dakota's crude oil production. The New Town Expansion Project will provide needed capacity to transport increased production of crude oil from the Bakken and Three Forks formations.

C.6 (f) Labor Relations

The New Town Pipeline did not have any effect on labor relations within the State of North Dakota for construction of the pipeline, and no effects are anticipated for proposed construction for the New Town Expansion Project.

C.6 (g) Coordination of Facilities

Existing Hiland crude pipelines and the New Town Pipeline, with their associated pumping, control, and operating systems, will be used in conjunction with each other to optimize system capacity.

C.6 (h) Monitoring of Impacts

Any construction-related impacts of the New Town Pipeline were mitigated through the use of best management practices, appropriate construction techniques, and environmental inspection during and following completion of construction. Following construction of the New Town Pipeline, a thorough inspection was performed to ensure restoration efforts were successful. Monitoring and treatment of noxious weeds and/or invasive species will be conducted on an annual basis to ensure a high degree of control and maximize treatment effectiveness. Ongoing environmental inspection will continue to be conducted for the New Town Pipeline.

Similar mitigation measures and monitoring of impacts will be implemented for proposed construction of the New Town Expansion Project to reduce construction-related impacts.

C.6 (i) Utilization of Existing and Proposed Rights-of-way and Corridors

The New Town Pipeline was constructed in a new 75-foot wide temporary construction ROW. Hiland has acquired 50-foot wide permanent easements for the New Town Pipeline, as well as possible future pipeline installation. Typical ROW configuration is shown in Figure 3.C.1. Hiland acquired the right to utilize additional temporary workspace from the landowners, where necessary, during construction of the New Town Pipeline. The use of unauthorized workspace was prohibited without the landowner's and Hiland's approval. In all cases, the amount of additional temporary workspace utilized was kept to the minimum necessary to safely conduct work. Temporary workspace was not restricted by or subject to permanent easement restrictions upon completion of construction.

Typical ROW Layout

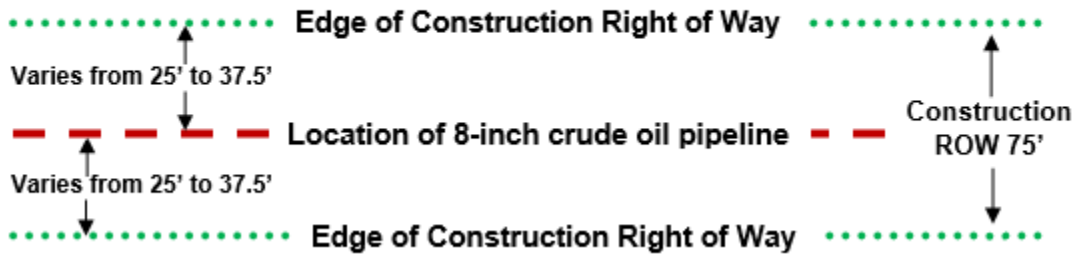


FIGURE 3.C.1 – Typical Right-of-Way Configuration

The New Town Receipt Station was constructed on 5 acres of private land adjoining the New Town Pipeline. Hiland acquired the land in fee before constructing the facility.

Hiland has acquired easements for the proposed New Town Interconnect.

C.6 (j) Other Existing and Proposed Transmission Facilities

Hiland constructed an additional transmission pipeline in Montana connecting to the Market Center System near Dore, North Dakota. The Double H pipeline will transport crude from Dore, North Dakota to Guernsey, Wyoming. The Double H pipeline commenced operation in February of 2015.

Enbridge Pipelines' Sandpiper Pipeline crude oil project will carry Bakken crude oil from Beaver Lodge, North Dakota to an existing terminal in Superior, Wisconsin, with a mid-route connection to the Clearbrook, Minnesota crude hub. This pipeline is expected to be completed in early 2016. Current projections expect a 225,000 to 375,000 bbls/day capacity depending on shipper commitments. This project will provide capacity for intrastate transports from Beaver Lodge south of Tioga to the eastern edge of the state, and ultimately export capacity to the Great Lake region refiners.

Paradigm Midstream Services - ND, LLC and Phillips 66 Partners plan to construct a 70-mile long pipeline and other facilities to transport crude oil from Johnson's Corner in McKenzie County, North Dakota, to Stanley Station in Mountrail County, North Dakota with connections to Dakota Plains Holdings, Inc.'s Pioneer crude oil rail terminal located in New Town in south

Mountrail County, North Dakota. The pipeline will also tie into Enbridge Pipeline's station located near Stanley in north Mountrail County. The interconnection will allow access to all of Enbridge North Dakota's existing pipelines as well as the Sandpiper Pipeline currently under construction. Enbridge also operates a crude oil rail terminal at Berthold. The intrastate pipeline and its interconnections to rail terminals and other pipeline systems will provide access to multiple refinery markets throughout the United States.

Energy Transfer Partners/Phillip 66 Company is expecting to build the 1,100 mile long Dakota Access Pipeline to move crude oil from North Dakota to Patoka, Illinois. The pipeline, with an initial capacity of 320,000 barrels per day and expandable to 575,000 barrels per day, will allow shippers to access markets in the Midwest, East Coast or Gulf Coast in addition to a new rail terminal planned in Illinois. The 16-inch to 30-inch diameter pipeline is expected to begin operation in 2016. The pipeline would originate near Stanley in Mountrail County, loop west along the north side of Lake Sakakawea, and cross the Missouri River near Fort Buford. The pipeline will then transect McKenzie County, connecting to new terminal tankage at both Watford City and Johnson's Corner until it parallels the Northern Border natural gas pipeline corridor to exit the state to the southeast.

TransCanada's Keystone XL pipeline project is a proposed 1,179-mile 36-inch diameter crude oil pipeline. This pipeline would extend from Hardisty, Alberta to Steele City, Nebraska. Along with transporting crude oil from Canada, the Keystone XL Pipeline will also support the significant growth of crude oil production in the United States from producers in the Bakken region of Montana and North Dakota. The pipeline's reported capacity is 830,000 barrels of oil per day to Gulf Coast and Midwest refineries.¹² If the Keystone XL is built, True Oil Company's Thunderbird pipeline, the BakkenLink pipeline, and Hiland's Double H pipeline are all expected to proceed with connections at Baker, Montana to ship crude to Gulf Coast refineries.

C.7 Design and Construction Limitations

See Section A of the Certificate of Corridor Compatibility Application (Tab 1).

C.8 Economic Considerations

See Section C.2 (g) of this Route Permit Application and Section C of the Certificate of Corridor Compatibility Application (Tab 1).

¹² TransCanada. "Keystone XL Pipeline," available at <http://keystone-xl.com/about/the-project/> (accessed on March 2, 2015).

SECTION D MITIGATION MEASURES

D.1 Measures to Preserve the Human Environment

Hiland requires its construction contractors to clean up personal litter, bottles, and paper deposited by ROW preparation and construction crews on a daily basis. Waste and scrap produced during construction is always removed and properly disposed of in accordance with applicable regulations prior to the completion of construction.

Hiland minimizes noise and dust resulting from construction near residences to the maximum extent practicable.

Prior to construction of the New Town Pipeline, Hiland obtained applicable permits for road crossings from Mountrail County. Hiland also obtained permission from all owners of private roads, including oil lease roads, to cross said roads. Temporary signs were posted at each crossing as appropriate to alert motorists of construction activity. Gravel roads were bored, minimizing interference with traffic flow caused by construction activities. No road crossings will occur with respect to the facilities to be installed for the New Town Expansion Project.

D.2 Measures to Protect Terrain and Geological Resources

Hiland restored the area affected by New Town Pipeline construction to pre-construction contours to the greatest extent practicable. Measures such as slope breakers, erosion control blankets, and re-vegetation were employed to maintain the stability of slopes along the ROW. No crown of backfill material was left over the trench in wetlands.

Restoration following construction of the New Town Pipeline was compatible with the safe operation, maintenance, and inspection of the gathering line. Any necessary restoration following proposed construction of the New Town Expansion Project will also occur.

Fuel and all other hazardous materials were stored in accordance with the requirements of the New Town Pipeline contractor's SPCC Plan, if applicable. The SPCC Plan describes response, containment, and cleanup measures. However, even for small quantities of oil-based liquids, containers and fueled equipment were not, and will not be, stored within 100 feet of surface water. Similar measures will be implemented for proposed construction of the New Town Expansion Project.

D.3 Measures to Protect Soils

For construction of the New Town Pipeline, Hiland implemented temporary and permanent erosion control measures as specified in the EMP (Tab 5 and Tab 6). The EMP was included in contract documents and enforced throughout construction of the New Town Pipeline. These measures will continue to be taken during all proposed New Town Expansion Project construction activities.

Temporary erosion and sedimentation control measures for New Town Pipeline construction included the installation of silt fences, straw bales, slope breakers, trench breakers, erosion control fabric, and mulch.

To minimize potential impacts on soil productivity following New Town Pipeline construction, topsoil was segregated during trench excavation in agricultural land, unsaturated wetlands, and other areas where soil productivity is an important consideration. Topsoil in cropland was removed to the depth of cultivation or a maximum depth of 12 inches from the trench and spoil storage area and stored separately from the trench spoil. After the trench was backfilled, topsoil was returned to its approximate original location. Compaction of agricultural soils was minimized by restricting New Town Pipeline construction activities during periods of prolonged rainfall. Where unacceptable levels of compaction could have occurred in agricultural lands, deep tillage equipment was utilized to loosen the soil to the extent reasonably practicable.

Hiland retained environmental experts to train Hiland's construction inspectors to monitor contractor compliance with applicable requirements to protect soil resources during construction for the New Town Pipeline. Similar measures will be implemented for proposed construction of the New Town Expansion Project, and the facility will be designed and constructed to minimize erosion and sediment migration.

D.4 Measures to Protect Vegetation and Wildlife

Prior to construction of the New Town Pipeline, Hiland cleared the ROW to the extent necessary to assure suitable access for construction, safe operation, and maintenance of the New Town Pipeline.

Utilizing the measures discussed in Section C.5 (a) above for pipeline construction, Hiland and its contractors effectively controlled or limited the spread of invasive plant species through control treatments and avoidance of existing populations where possible. Treatments were initiated prior to pipeline construction to lessen the potential for this activity to disperse propagules along the freshly disturbed route. Monitoring and treatment are conducted on an annual basis to ensure a high degree of control and maximize treatment effectiveness.

In areas that required permanent re-vegetation following the New Town Pipeline construction, Hiland specified appropriate seed mixes, application rates, and seeding dates, taking into account recommendations of appropriate state and federal agencies and landowner requests. In non-agricultural areas, vegetation cleared from extra workspace was allowed to re-vegetate after construction depending on arrangements with the landowner.

Over the next three years, Hiland will continue to work to re-establish vegetation consistent with prior cover types in each area affected by New Town Pipeline construction. Hiland will similarly re-vegetate the ROW area affected by proposed construction for the New Town Expansion Project.

Hiland took appropriate precautions to protect livestock and crops during New Town Pipeline construction. These same measures are expected to be implemented during proposed New Town Expansion Project construction activities. Operation of the New Town Expansion Project, including the pipeline and associated facilities, has not and is not anticipated to significantly affect terrestrial wildlife, fisheries resources, or other aquatic species. Shelter belts and trees were protected and restored by Hiland to the extent practicable in a manner compatible with the safe operation, maintenance, and inspection of the New Town Pipeline.

D.5 Measures to Protect Land Use

In connection with construction of the New Town Pipeline, Hiland obtained and complied with applicable county permits regulating zoning and land use. These permits include a Pipeline Utility Permit and a Road Crossing Permit. Hiland will utilize construction inspectors to monitor compliance with environmental conditions of county permits during any proposed New Town Expansion Project construction activities.

Hiland repaired surface drains disturbed during ROW preparation, construction, and maintenance activities for New Town Pipeline construction. Hiland repaired private roads and farm lanes damaged when moving equipment or when obtaining access to the ROW. Hiland repaired or replaced fences and gates removed or damaged as a result of ROW preparation, construction, or maintenance activities for the New Town Pipeline. Hiland will similarly repair any such items removed or damaged during proposed construction of the New Town Expansion Project.

The existing New Town Pipeline was installed at a minimum depth of 48 inches from the surface contour to minimize the potential for environmental damage resulting from deep tillage activities, unless modified to accommodate special construction issues at a particular site.

Shelter belts and trees were and will be avoided by Hiland to the extent possible in a manner compatible with the safe operation, maintenance, and inspection of the New Town Expansion Project. Proposed construction of facilities for the New Town Expansion Project is not anticipated to require tree removal.

D.6 Measures to Protect Water Resources

Hiland's EMP describes best management practices that were implemented to minimize off-site erosion from surface water runoff, and to protect water and soil resources within the New Town Pipeline ROW for pipeline construction.

No additives to discharge water were permitted without written approval from Hiland, in accordance with the applicable permits. Construction inspectors with environmental training monitored compliance with permits during pipeline construction. Where appropriate, water was discharged into an energy dissipation and/or filtering device to remove sediment and to reduce the erosive energy of the discharge.

Proposed construction of the New Town Expansion Project will utilize the same best management practices to protect water resources.

D.7 Measures to Protect Cultural Resources

Based on the results of the Class I and Class III cultural resource inventories, a finding of *No Adverse Effects* has been issued by Beaver Creek Archaeology, provided that the recommendations are followed as discussed in Section B.6. The findings of all inventory studies are presented in more detail on the route maps found in Tab 4, Figure 4.B.1.

An "Unanticipated Discovery Plan" has been developed should unexpected artifacts be uncovered during the proposed New Town Expansion Project construction. The plan has been sent to and approved by the SHPO. Beaver Creek Archaeology recommends that the

“Unanticipated Discovery Plan” approved by the SHPO be used during all construction phases of the New Town Expansion Project.

Unanticipated Discovery Plan

In order to minimize the potential for the accidental discovery of cultural resources, Hiland conducted intensive pedestrian inventories along the entire New Town Pipeline route. To ensure that Hiland maintains full and complete compliance with all Federal and State regulations concerning the protection of cultural resources, an Unanticipated Discovery Plan has been prepared for the New Town Expansion Project. Construction may result in the discovery of unanticipated cultural resources, or of cultural resources in areas where they were not expected to occur.

All inspectors have the responsibility to monitor the construction of sites for potential archaeological remains throughout construction. If, during the course of construction, sites for potential cultural resources are identified, the inspector will immediately stop tasks in the vicinity of the potential find and make work stoppage recommendations to the Construction inspector. Should a work stoppage authority be deemed necessary, Hiland will notify the SHPO and will inform the archaeological consultant who will survey the site and provide an immediate verbal report to Hiland and the SHPO. Hiland will continue to consult with the SHPO as per the requirements of Section 106 of the National Historic Preservation Act (“NHPA”). The contact is:

Paul R Picha, Chief Archaeologist
North Dakota State Historic Preservation Office
State Historical Society of North Dakota
612 East Boulevard Avenue
Bismarck, North Dakota 58505-0830
(701) 328-3574

If the unanticipated discovery is determined to be not eligible for inclusion on the NRHP, Hiland will proceed with the New Town Expansion Project construction following written concurrence from the SHPO. If the site is determined to be potentially eligible for inclusion on the NRHP, additional work such as a Determination of Eligibility of Data Recovery will be performed as required/approved by the SHPO. Further work at the site will be suspended until all criteria of Section 106 of the NHPA and other Federal and State regulations have been successfully completed.

If human remains and/or a burial are encountered, these remains, features and any associated artifacts shall be left undisturbed, work at the site of discovery shall cease immediately, and the site shall be secured from further trespass. Hiland shall immediately contact the SHPO and local law enforcement and shall not resume work at the site until further notice from the SHPO per North Dakota Century Code Section 23-06-27 – Protection of human burial sites, human remains and burial goods, and North Dakota Administrative Code Chapter 40-02-03 – Protection of Prehistoric and Historic Human Burial Sites, Human Remains, and Burial Goods.

Under no circumstances will human remains be removed from the site without completing all coordination processes with the local law enforcement agency, medical examiner, the SHPO and Native American representatives, as appropriate. Further work at the site will be suspended until all criteria of Section 106 of the NHPA and other related state and Federal regulation have been successfully completed.

SECTION E QUALIFICATIONS OF PERSONS CONTRIBUTING TO THE STUDY

The qualifications of the personnel who contributed to the route application include:

(1) Jim Suttle, Vice President – Kinder Morgan, Inc.

Degree: Bachelor of Art — Political Science, Wichita State University
Masters of Philosophy, Houston Baptist University

Experience: 33 years in petroleum industry, serving in multiple assignments including pipeline design, operation and construction. Senior Vice President of Hiland Crude, LLC since 2010.

(2) Kathleen Spilman, Managing Director – Keitu Engineers & Consultants, Inc.

Degree: Bachelor of Science - Chemical Engineering, University of North Dakota
Masters in Management, University of Mary

Experience: 32 years' experience in petroleum refining and fuels transportation field as well as regulatory affairs and compliance.

Professional License: Registered Professional Engineer: North Dakota, South Dakota, Montana

(3) Heather Patch, Staff Engineer (Chemical) – Keitu Engineers & Consultants, Inc.

Degree: Bachelor of Science, Chemical Engineering, University of North Dakota

Experience: 3 years' experience in engineering, regulatory affairs and compliance.

Other Training: CHMM Test Preparatory Class, Natural Gas Plant Operators Class, USDOT-sponsored Hazardous Material Shipping Class

(4) Karine Becker, Project Manager – Keitu Engineers & Consultants, Inc.

Degree: Bachelor of Science, Natural Resource Management,
University of Minnesota - Crookston

Experience: 6 years' experience in natural resource management.

Other Training: GIS, Listed and Candidate species in the Endangered Species Act compliance in North Dakota, Bald and Golden Eagle Protection Act, piping plover and least tern surveying, prairie restoration, Keitu In-Service classes on North Dakota plant and animal habitat identification, raptor Identification

SECTION F MAPS

See Tab 4, Figure 4.B, for the New Town Expansion Project Mapbook and Tab 7 for ESRI software shapefiles.

SECTION G OTHER MATTERS

The information provided below is in accordance with North Dakota Century Code Sections 49-22-08.1(1)(e), (f), and (g).

G.1 Right-of-Way Preparation, Construction, and Reclamation Procedures for the Pipeline

Critical safety aspects of pipeline installation are governed by US DOT regulations subject to the jurisdiction of the PHMSA, which has tended to standardize installation techniques. The advancement of technology has introduced significant improvements in the techniques and equipment available to install underground pipelines, reducing both the time required and the size or “footprint” of impact.

Construction of the New Town Pipeline followed standard techniques employed by other projects installed in North Dakota. Typical ROW preparation, pipeline construction, and reclamation using girth full penetration welds include: (1) survey and staking of the right-of-way; (2) clearing; (3) front-end grading; (4) right-of-way topsoil stripping; (5) pipeline route staking; (6) pipe stringing; (7) pipe bending; (8) pipe alignment and initial weld; (9) fill and cap with final weld; (10) as built footage; (11) x-ray inspection and weld repair; (12) coating field welds and coating inspection; (13) trenching; (14) lowering pipe into trench; (15) as-built survey; (16) pad, backfill to rough grade; (17) hydrostatic testing and system tie-in; (18) clean-up; and (19) restoration and re-vegetation.

G.1 (a) Survey and Staking

Before construction of the New Town Pipeline, Hiland crews surveyed and staked the centerline and exterior boundaries of the construction ROW. The exterior boundary stakes mark the limit of approved disturbance areas, which were maintained throughout the construction period. The North Dakota One Call system was utilized to identify and mark the locations of underground utilities in the construction corridor. During this period, equipment involved in pipeline construction was moved onto the ROW using existing roads for access wherever practicable.

G.1 (b) Clearing

Hiland cleared the 75-foot-wide ROW utilized for New Town Pipeline construction of shrubs and trees. The clearing crew typically mowed, chipped, mulched, and/or hauled off all non-merchantable timber. Burning of non-merchantable wood was allowed when the contractor had obtained the necessary permits and approvals. No merchantable timber was cleared from the ROW.

G.1 (c) Grading

Following clearing, the surface was graded to provide a relatively smooth working surface and a safe working area.

G.1 (d) Topsoil Stripping

For New Town Pipeline construction, topsoil was stripped and segregated in agricultural areas, cropland, hayfields, pasture, residential areas, and other areas as requested by the landowner along the New Town Pipeline route in accordance with Hiland's EMP. In unsaturated wetlands, a maximum of 12 inches of surficial soils was also stripped from the trench areas. Topsoil was stripped to the depth of cultivation or a depth of 12 inches, whichever was greater.

G.1 (e) Pipeline Route Staking

Once the topsoil had been stripped and stockpiled, the New Town Pipeline route was resurveyed and staked.

G.1 (f) Pipe Stringing

Before excavating pipeline trenches, individual joints of pipe were strung along the construction right-of-way and arranged to be accessible to construction personnel. This operation involved specially designed stringing trucks to deliver pipe from pipe yards to the ROW. Small portable cranes and/or side-boom tractors were used to unload the stringing trucks and place pipe along the ROW.

G.1 (g) Pipe Bending

A pipe-bending machine bent individual joints of pipe to the desired angle to accommodate natural ground contours or pipeline alignment. In certain areas, prefabricated fittings were used where field bending was not practicable.

G.1 (h) Pipe Alignment and Initial Weld

After stringing and bending were completed, pipe sections were aligned and placed on temporary supports located adjacent to the proposed trench locations. Pipe ends were attached to each other using short welds or high pressure joining techniques.

G.1 (i) Fill and Cap Segment Welds

Final welds were completed around the entire circumference of the pipe joints in compliance with applicable industry standards and PHMSA requirements.

G.1 (j) As-built Footage

Once welding was complete, Hiland compared the as-built condition and length of the pipeline with construction drawings. Documents were edited to reflect impacts of field decisions as well as final locations of lateral tie-in points, other pipeline apertures, and cathodic protection connections.

G.1 (k) X-Ray Inspection and Weld Repair

PHMSA regulations require that at least 10% of the field welds be inspected using radiological (i.e., X-ray) and/or other non-destructive testing, such as checking coating integrity. Hiland engaged a third-party inspection service provider meeting PHMSA certification requirements to

perform X-ray inspections of nearly 100% of the welds. After adequate performance had been established based on statistically significant data, and each of the New Town Pipeline's welders had demonstrated proper weld material handling, a reduction in the percentage of welds inspected was considered; however, the percentage of welds inspected never fell below the requisite 10%. When welds were deemed inadequate, appropriate repairs were made consistent with PHMSA regulations and re-inspected. Inspection records were cross-referenced against the final "as-built" footage of the pipeline.

G.1 (l) Coating and Coating Inspection of Field Welds

The pipe was delivered with a factory coating of fusion-bonded epoxy or similar material to prevent corrosion. Hiland applied coating at welded joints and electronically inspected the pipeline coating before the pipe was lowered into the trench.

G.1 (m) Trenching

Backhoes and/or ditching machines were used to excavate trenches in accordance with PHMSA regulations, which require a minimum 30 inches of cover for normal excavations and 18 to 30 inches of cover in rocky areas. Hiland uses a minimum cover of 48 inches. The trench walls were generally kept vertical to the extent practicable and the trenches were typically 30 to 40 inches wide.

Water from trench dewatering was discharged directly to the ground if there was adequate vegetation along the ROW to filter the water effectively. Where vegetation was sparse or absent, or in environmentally sensitive areas (e.g., adjacent to water bodies or wetlands), straw bale dewatering structures or suitable filtering alternatives were used to minimize siltation in adjacent water bodies.

G.1 (n) Lowering Pipe Into Trench

After welding and coating were completed and the trench was excavated, the pipe was lowered into the trench by side-boom tractors.

G.1 (o) As-built Survey

A survey of the final location of the New Town Pipeline was made.

G.1 (p) Pad and Backfill to Grade

Bladed equipment or a specially designed backfilling machine was used to backfill the trench to the approximate ground surface elevation. This consisted of replacing the material excavated from the trench. In areas where topsoil had been segregated, subsoil was replaced first, and topsoil was spread uniformly on top. Directly above the pipeline, an excess of soil or "crown" was placed to allow for future settling, except in wetlands.

Construction debris, including wooden supports, welding rods, containers, brush, trees, or refuse of any kind, was not permitted in the backfill. If an excessive amount of rocks was present in the backfill, the pipeline was protected with rock shield or similar protective coating and/or backfilled with clean padding prior to backfilling with the rocky material.

G.1 (q) Hydrostatic Testing

After backfilling, Hiland tested the pipe pneumatically in accordance with the PHMSA regulations to ensure that the system was capable of operating at the design pressure. The testing process involved filling a segment of the pipeline with water and maintaining a prescribed pressure for a specified amount of time.

G.1 (r) Cleanup

Cleanup involved removing construction debris (including litter generated by construction crews and excess rock) and replacing fences removed during New Town Pipeline Construction. In addition, extraneous material that would impede seed bed preparation was removed from the ROW. Fences that were removed to install the pipeline were reconstructed.

G.1 (s) Restoration and Re-vegetation

Following installation and final cleanup of the New Town Pipeline construction area, original grade and contours were restored to the extent practicable, and temporary and permanent erosion controls were installed. Disturbed areas are in the process of being re-vegetated in accordance with permit requirements, agency input, and site-specific landowner requests. Monitoring will continue until 70% or higher vegetative cover has been established.

G.2 Landowner Issues

G.2 (a) Procedures for Landowner Relations

Hiland has finalized easement agreements with all landowners along the New Town Pipeline route. Construction of the pipeline occurred after the harvest and prior to the planting season when feasible, minimizing impacts to agriculture.

A brief description of the pipeline was mailed to affected landowners and known tenant farmers. Hiland is committed to providing landowners complete information about the pipeline and associated facilities and keeping them informed throughout the lifetime of the New Town Expansion Project. Hiland personally contacted landowners to discuss methods of calculating damage settlements and tenant's rights, and to address any unique property concerns.

G.2 (b) List of Landowners

By use of county records, a current list of landowners was generated and used to contact residents. In addition to landowners, all known tenant farmers in the construction area were notified prior to New Town Pipeline construction. A list of landowners and tenants is provided in Tab 4, Appendix 4.C.

G.3 Operations and Safety

G.3 (a) Pipeline Operation and Control

Although not required by regulation, Hiland maintains remote monitoring and control of the New Town Pipeline system. Hiland's Control Center is monitored by pipeline operators 24 hours a day. The Control Center also serves as an emergency center to receive calls from employees,

the public, or public officials reporting unusual conditions of the pipeline, associated storage or pumping equipment, and/or pipeline failures.

The New Town Pipeline was also designed to accommodate an instrumented internal inspection device to detect and record the type and location of corrosion or other defects for long-term monitoring of the pipeline integrity.

G.3 (b) Communications Capabilities

Land-lines and satellite communications are used to exchange the necessary computerized data for pipeline monitoring and control. Hiland uses cellular phones as needed to facilitate personnel communications during operation, maintenance, or emergency activities.

G.3 (c) Protection of the Pipe from Damage

Hiland has an aggressive program to educate excavators and the public about the presence of the New Town Pipeline and to prevent damage from excavating equipment. Hiland participates in and supports the North Dakota One-Call system.

The New Town Pipeline is protected from corrosion in a number of ways. The pipeline is covered with a protective coating. In addition, the pipeline is under a cathodic protection system, as required by PHMSA regulations.

G.3 (d) Inspections

Hiland conducts routine inspections of the New Town Pipeline to determine that the system is operating properly, in compliance with PHMSA regulations.

Each calendar year (not to exceed a 15-month interval), the cathodic protection system is monitored by taking pipe/structure-to-soil readings and, where possible, line current readings. Additionally, each rectifier and anode ground bed used to impose cathodic protection on the pipeline is inspected to ensure proper operation. Repairs and adjustments to the cathodic protection system are either made during the annual survey or during later maintenance activities. At least six times per year, each rectifier and critical cathodic protection interference bond to foreign structures is inspected and corrective measures are taken, if needed.

Hiland also periodically evaluates the effectiveness of its cathodic protection system by conducting supplemental close interval surveys (e.g., close interval pipe to soil, etc.) of the system.

Hiland conducts weekly aerial inspections. These inspections are to verify that no abnormal conditions or dangerous activities, e.g., unauthorized excavation, have taken place along the routes of the lines.

Isolating valves are checked at least twice per year to ensure proper operation. Other components of the New Town Expansion Project, such as tanks and pump stations will also be routinely inspected.

Hiland periodically inspects the pipeline internally with a tool called a caliper pig. These devices travel through the inside of the pipeline and either mechanically, ultrasonically, or magnetically

examine the condition of the pipe using on-board computers. Results of the inspection are analyzed, and the pipe is manually inspected to verify preliminary findings. Repairs are conducted where necessary.

Storage tanks are periodically removed from service, cleaned and internally inspected for evidence of unexpected corrosion or damage. Repairs are performed as necessary.

All overpressure safety devices capable of limiting, regulating, controlling, and/or relieving operating pressures are inspected and tested to ensure the device is in good mechanical condition and functioning properly.

Periodically, government officials inspect compliance with applicable government regulations. The PHMSA routinely inspects written procedures, records, and facilities. The majority of the pipeline system is rural and exempt. To date, there have been no PHMSA inspections on non-exempt portions. In addition, inspection by weekly aerial line flights are used by Hiland as a BMP.

G.3 (e) Maintenance

Many other maintenance activities are performed on the New Town Pipeline, and will similarly be performed on the proposed New Town Expansion Project. Hiland has a comprehensive preventative maintenance program that meets and, in many cases exceeds, minimum federal safety standards set forth in PHMSA regulations, including 49 C.F.R. Part 195. When facilities are added or replaced, there are comprehensive standards for their design and installation in both Hiland procedure manuals and contract specifications. Repair pipe is pre-tested and other components used to repair the pipeline meet national standards and regulatory requirements. Other procedures, such as welding procedures, movement of the pipe, coating repair, corrosion control, and tank maintenance are all guided by written procedures which have been reviewed by the PHMSA inspectors.

G.3 (f) Training of Personnel

Hiland has established a comprehensive orientation, technical, safety, emergency, and on-the-job training program that is in compliance with the Operator Qualification rules issued by PHMSA under 49 C.F.R. Part 195. As personnel progress in pipeline operation and maintenance positions, they receive hundreds of hours of formal and on-the-job training. Demonstrations of competence are shown through review of job performance, periodic pipeline control system simulators, emergency exercises, welding certification tests, and other functions required to continue safe pipeline operation and maintenance.

G.3 (g) Public Awareness Program

Hiland conducts a public education program to ensure that the affected public (i.e., those who work and live near the New Town Expansion Project), excavators, local public officials, and emergency responders can recognize and avoid or respond to a pipeline emergency. Hiland has also been active at the local, county, and state levels in emergency response planning and joint training to prepare all potential responders to deal with emergencies.

The New Town Pipeline route is marked at all public road and railway crossings (at a minimum) to increase the public's awareness of the underground pipeline. Additional markings are posted at valves, other pipeline facilities, and stations along the New Town Pipeline route.

G.3 (h) Emergency Preparedness

Hiland's operating and maintenance practices are aimed at preventing emergencies. However, it is imperative that Hiland be prepared to respond to an emergency should one occur. In addition to the preventative activities described above, Hiland's emergency response program includes pre-planning, equipment staging, notifications, emergency and leak containment procedures, and procedures for engaging the services of area contract spill responders. Emergency Response Plans were prepared for all North Dakota transportation and non-transportation related storage and use facilities with aggregate storage capacities in excess of 1,320 gallons. The Emergency Response Plan was submitted and approved by PHMSA as required by 49 C.F.R. Part 194.