MAGELLAN
MIDSTREAM PARTNERS, L.P.

Route Permit Application Before the Minnesota Public Utilities Commission

MPUC Docket No. IP7109/PPL-23-109

April 2023

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Acronyms and Abbreviations

Name	Description
§	Section
a.m.	ante meridian; morning
API	American Petroleum Institute
AR	access road
ATWS	Additional temporary workspace
BGEPA	Bald and Golden Eagle Protection Act
BMP	Best Management Practices
BMP Plan	Pipeline Construction Best Management Practices Plan
bph	barrels per hour
CBG	Census Block Group
CFR	Code of Federal Regulations
Ch.	Chapter
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
Commission	Minnesota Public Utilities Commission
COVID-19	coronavirus disease 2019
CWA	Clean Water ACT
dBA	A-weighted decibel
DCH	designated critical habitat
DNR	Department of Natural Resources
DOI	U.S. Department of the Interior
DWSMA	Drinking Water Supply Management Areas
ECS	Ecological Classification System
EI	Environmental Inspector
EJ	environmental justice
ERM	Environmental Resources Management, Inc.
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
GHG	greenhouse gas
GIS	Geographic Information Systems
GPS	Global Positioning System
HCA	high consequence area
HDD	horizontal directional drilling
HUC	hydrologic unit code
IBA	Important Bird Area
ID	identification
IPaC	Information for Planning and Consultation System
L_{10}	sound level exceeded 10 percent of the measurement period
L_{50}	sound level exceeded 50 percent of the measurement period
L_{90}	sound level exceeded 90 percent of the measurement period
LiDAR	light detection and ranging
MBS	Minnesota Biological Survey
MBTA	Migratory Bird Treaty Act
Minn. R.	Minnesota Administrative Rules
Minn. Stat.	Minnesota Statute
MLRA	Major Land Resource Area

Name	Description
MN	Minnesota
MPCA	Minnesota Pollution Control Agency
Monument	Pipestone National Monument
MPUC	Minnesota Public Utilities Commission
N_2O	nitrous oxide
NA	not applicable
NHD	National Hydrography Dataset
NHIS	Natural Heritage Information System
NLEB	northern long-eared bat
NOx	nitrous oxide
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NSA	noise sensitive area
NWI	National Wetlands Inventory
NWR	National Wildlife Refuge
O_3	ozone
Pb	lead
PEM	palustrine emergent
PFO	palustrine forested
PHMSA	Pipeline and Hazardous Materials Safety Administration
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PM_{10}	particulate matter less than 10 microns in diameter
psi	pounds per square inch
psig	pounds per square inch gauge
PSS	palustrine scrub-shrub
PUB	palustrine unconsolidated bottom
ROW	right-of-way
RVR	riverine
SO_2	sulfur dioxide
SSURGO	Soil Survey Geographic
subd.	subdivision
subp.	subpart
SWPPP	Stormwater Pollution Prevention Plan
TCB	tricolored bat
THPO	Tribal Historic Preservation Officer
TMDL	Total Maximum Daily Load
U.S.C.	United States Code
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VOC	volatile organic compounds
WCA	Wetland Conservation Act

Completeness Checklist

Authority	Required Information	Section
Minnesota Rules Chapter 7852	Route Permit for Refined Products Pipeline	
7852.2100	General Information.	
Subpart 1	Cover letter. Each application must be accompanied by a cover letter signed by an authorized representative or agent of the applicant. The cover letter must specify the type, size, and general characteristics of the pipeline for which an application is submitted.	Attached
Subpart 2	Title page and table of contents. Each application must contain a title page and a complete table of contents.	Cover, Pages i-iv
	Introduction.	
	Summary of Proposed Action.	
Subpart 3	Statement of ownership. Each application must include a statement of proposed ownership of the pipeline as of the day of filing and an affidavit authorizing the applicant to act on behalf of those planning to participate in the pipeline project.	Section 1.2
Subpart 4	Background Information. Each application must contain the following information:	
Subpart 4A	The applicant's complete name, address, and telephone number;	Section 1.2.1
Subpart 4B	The complete name, title, address, and telephone number of the authorized representative or agent to be contacted concerning the applicant's filing;	Sections 1.2.2 and 1.2.3
Subpart 4C	The signatures and titles of persons authorized to sign the application, and the signature of the preparer of the application if prepared by an outside representative or agent.	Section 1.2.4
	Project Overview.	
Subpart 4D	Project Description. A brief description of the proposed project which includes:	Section 2 and 3
Subpart 4D(1)	General location;	Section 3.2.1
Subpart 4D(2)	Planned use and purpose;	Section 2
Subpart 4D(3)	Estimated cost;	Section 3.6
	Project schedule;	Section 3.8
Subpart 4D(4)	Planned in-service date;	Section 3.8
Subpart 4D(5)	General design and operational specifications.	Section 3.4
7852.2200	Proposed Pipeline and Associated Facilities Description.	
Subpart 1	Pipeline design specifications. The specifications for pipeline design and construction are assumed to be in compliance with all applicable state and federal rules or regulations unless determined otherwise by the state or federal agency having jurisdiction over the enforcement of such rules or regulations. For public information purposes, the anticipated pipeline design specifications must include but are not limited to:	
Subpart 1A	Pipe size (outside diameter) in inches;	Section 3.2.2

Authority	Required Information	Section
Subpart 1B	Pipe type;	Section 3.2.2, Table 3.2-1
Subpart 1C	Nominal wall thickness in inches;	Section 3.2.2, Table 3.2-1
Subpart 1D	Pipe design factor;	Section 3.3.2, Table 3.2-1
Subpart 1E	Longitudinal or seam joint factor;	Section 3.2.2, Table 3.2-1
Subpart 1F	Class location and requirements, where applicable;	NA
Subpart 1G	Specified minimum yield strength in pounds per square inch; and	Section 3.2.2, Table 3.2-1
Subpart 1H	Tensile strength in pounds per square inch.	Section 3.2.2, Table 3.2-1
Subpart 2	Operating pressure. Operating pressure must include:	
Subpart 2A	Operating pressure (psig); and	Section 3.2.3
Subpart 2B	Maximum allowable operating pressure (psig).	Section 3.2.3
Subpart 3	Description of associated facilities. For public information purposes, the applicant shall provide a general description of all pertinent associated facilities on the right-of-way.	Section 3.3
Subpart 4	Product capacity information. The applicant shall provide information on planned minimum and maximum design capacity or throughput in the appropriate unit of measure for the types of products shipped as defined in part 7852.0100.	Section 3.4.1
Subpart 5	Product description. The applicant shall provide a complete listing of products the pipeline is intended to ship and a list of products the pipeline is designed to transport, if different from those intended for shipping.	Section 3.4.2
Subpart 6	Material safety data sheet. For each type of product that will be shipped through the pipeline, the applicant shall provide for public information purposes the material identification, ingredients, physical data, fire and explosive data, reactivity data, occupational exposure limits, health information, emergency and first aid procedures, transportation requirements, and other known regulatory controls.	Section 3.4.3 and Appendix B
7852.2300	Land Requirements.	
	For the proposed pipeline, the applicant shall provide the following information	
Subpart A	Typical Permanent right-of-way length, average width, and estimated acreage	Sections 3.5.1 and 3.5.8
Subpart B	Typical Temporary right-of-way (workspace) length, estimated width, and estimated acreage:	Sections 3.5.1 and 3.5.8
Subpart C	Estimated range of minimum trench or ditch dimensions, including bottom width, top width, depth, and cubic yards of dirt excavated:	Section 3.5.5
Subpart D	Minimum depth of cover for state and federal requirements; and	Section 3.5.6

Authority	Required Information	Section
Subpart E	Rights-of-way sharing or paralleling: type of facility in the right-of-way, and the estimated length, width, and acreage of the right-of-way.	Section 3.5.7
7852.2400	Project Expansion. If the pipeline and associated facilities are designed for expansion in the future, the applicant shall provide a description of how the proposed pipeline and associated facilities may be expanded by looping, by additional compressor and pump stations, or by other available methods.	Section 3.7
7852.2500	Right-of-Way Preparation Procedures and Construction Activity Sequence. Each applicant shall provide a description of the general right-of- way preparation procedures and construction activity sequence anticipated for the proposed pipeline and associated facilities.	Section 4
7852.2600	Description of Preferred Route.	
Subpart 1	The applicant must identify the preferred route for the proposed pipeline and associated facilities, on any of the following documents which must be submitted with the application:	
Subpart 1A	United States Geological Survey topographical maps to the scale of 1:24,000, if available;	Appendix A, Figure 1.1-1
Subpart 1B	Minnesota Department of Transportation county highway maps; or	NA
Subpart 1C	Aerial photos or other appropriate maps of equal or greater detail in items A and B. The maps or photos may be reduced for inclusion in the application. One full- sized set shall be provided to the commission.	Appendix A, Figure 1.1-2
Subpart 2	Other route locations. All other route alternatives considered by the applicant must be identified on a separate map or aerial photos or set of maps and photos or identified in correspondence or other documents evidencing consideration of the route by the applicant.	Appendix A, Figure 5.2-1
Subpart 3	Description of environment. The applicant must provide a description of the existing environment along the preferred route.	Sections 6.2 through 6.18
7852.2700	Environmental Impact of Preferred Route. The applicant must also submit to the commission along with the application an analysis of the potential human and environmental impacts that may be expected from pipeline right-of-way preparation and construction practices and operation and maintenance procedures. These impacts include but are not limited to the impacts for which criteria are specified in part 7852.0700 or 7852.1900.	Sections 6.2 through 6.18
7852.2800	Right-of-Way Protection and Restoration Measures.	
Subpart 1	Protection. The applicant must describe what measures will be taken to protect the right-of-way or mitigate the adverse impacts of right-of-way preparation, pipeline construction, and operation and maintenance on the human and natural environment.	Section 4 and Appendix C, BMP Plan
Subpart 2	Restoration. The applicant must describe what measures will be taken to restore the right-of-way and other areas adversely affected by construction of the pipeline.	Section 4.1.12
7852.2900	Operation and Maintenance. Pipeline operations and maintenance are assumed to be in compliance with all applicable state and federal rules or regulations, unless determined otherwise by the state or federal agency having jurisdiction over the enforcement of	Section 4.2, Sections 6.2 through 6.18

Authority	Required Information	Section
	such rules or regulations. For public information purposes, the applicant must provide a general description of the anticipated operation and maintenance practices planned for the proposed pipeline.	
7852.3000	List of Government Agencies and Permits. Each application must contain a list of all the known federal, state, and local agencies or authorities and titles of the permits they issue that are required for the proposed pipeline and associated facilities.	Section 6.19
7852.3100	Evidence of Consideration of Alternative Routes. If the applicant is applying for a pipeline routing permit under parts 7852.0800 to 7852.1900, the applicant shall provide a summary discussion of the environmental impact of pipeline construction along the alternative routes consistent with the requirements of parts 7852.2600 to 7852.2700 and the rationale for rejection of the routing alternatives.	Section 5, Appendix A, Figure 5.2-1

EXECUTIVE SUMMARY

Magellan Pipeline Company, L.P. (Magellan or Applicant), submits this Application for a Pipeline Route Permit for the Pipestone Reroute Project (Project) to the Minnesota Public Utilities Commission. The Project will relocate approximately 0.74 mile of the existing 8-inch pipeline from federal lands managed by the U.S. Fish and Wildlife Service and National Park Service within the Pipestone Creek Unit of the Northern Tallgrass Prairie National Wildlife Refuge and the Pipestone National Monument, respectively. As proposed, the 1.3-mile reroute will be located on private lands west and north of the federal lands. Figure ES-1 shows the deactivated and abandoned pipeline and Magellan's proposed route.

The reroute is necessary to restore operations to the existing 8-inch Magellan refined products pipeline that serves communities in eastern North Dakota, eastern South Dakota, and western Minnesota. The right-of-way (ROW) permit across federal lands that was granted to Magellan's predecessor expired, and the U.S. Department of the Interior has determined that it will not issue a renewed ROW permit for the section of the existing pipeline across federal lands. The U.S. Department of the Interior directed Magellan to take the pipeline out of service by October 1, 2022, and Magellan complied with this request. Final deactivation and abandonment of the portion of the pipeline underlying the federal lands occurred in December 2022.

Magellan initially considered permanently shutting down the pipeline, but a pending formal rulemaking by the U.S. Environmental Protection Agency that would mandate the availability of two special grades of gasoline, not currently available for use in the state of Minnesota, may increase the likelihood of fuel shortages in this region if the pipeline is not restored to service. Therefore, the reroute Project is intended to ensure the continued adequate supply of the current and new gasoline and diesel fuels in western Minnesota and the surrounding region. While this pipeline is out of service, the distribution terminals connected to Magellan's pipeline system in this region will be connected to fewer supply sources, which will increase the likelihood for fuel shortages at those terminals if there are disruptions at the remaining supply sources. For example, Magellan can no longer efficiently transport refined products by pipe from refineries located in Oklahoma and Kansas to Magellan's terminals in western Minnesota, eastern South Dakota, or eastern North Dakota since the pipeline segment from Sioux Falls, South Dakota, to Marshall, Minnesota, was taken out of service. Eliminating this bidirectional segment of pipe from Sioux Falls to Marshall reduces the reliability of fuel supply in this region.

The Project has been designed to transport refined petroleum products at its anticipated annual capacity and has not been designed for expansion. In total, Project construction will affect approximately 17.86 acres of land and includes the following components:

- 1.3-mile-long pipeline route
- 6.96 acres of new ROW
- Cathodic protection system with two test points and one ground bed
- Five temporary access roads and one permanent access road (all following existing roads)
- Pipeline markers placed at property lines to mark the pipeline easement

Magellan has proactively conducted outreach through letters, email, and in-person meetings with local, state, and tribal representatives to provide information about the Project in its early stages and encourage feedback. Magellan will continue these activities throughout the Project.

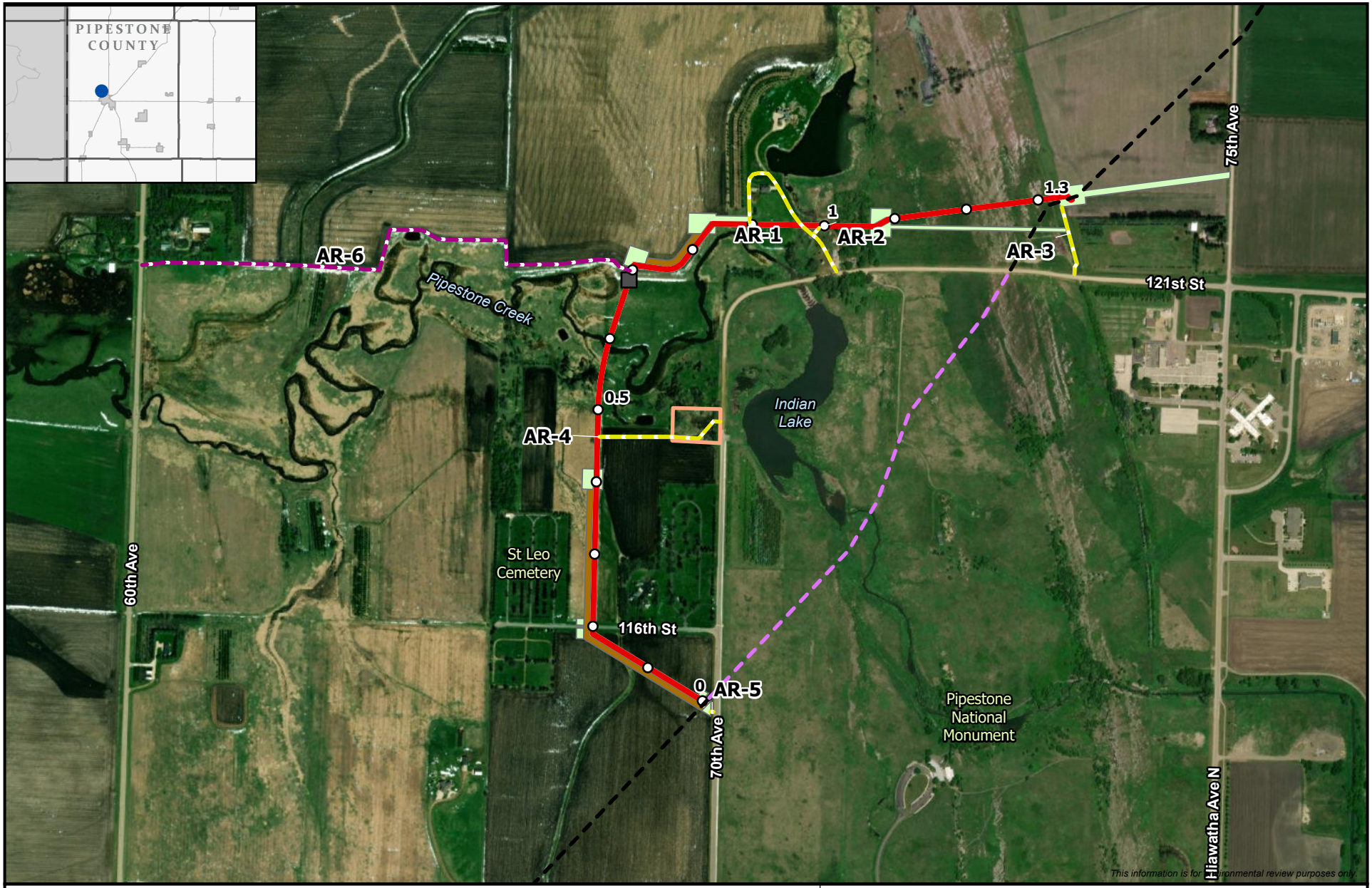

Figure ES-1
Project Overview
Magellan Pipeline Company, L.P.
Pipestone County, Minnesota

MAGELLAN MIDSTREAM PARTNERS, L.P.

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1. INTRODUCTION

Magellan Pipeline Company, L.P. (Magellan or Applicant) hereby respectfully submits this Application for a Pipeline Route Permit for the Pipestone Reroute Project (Project). The Project will relocate approximately 0.74 mile of the existing 8-inch pipeline from federal lands managed by the U.S. Fish and Wildlife Service (USFWS) and National Park Service (NPS) within the Pipestone Creek Unit of the Northern Tallgrass Prairie National Wildlife Refuge (NWR) and the Pipestone National Monument, respectively. The reroute will be located on private lands west and north of the federal lands.

The reroute is necessary to restore operations to the existing 8-inch Magellan refined products pipeline that serves communities in eastern North Dakota, eastern South Dakota, and western Minnesota. The right-of-way (ROW) permit across federal lands that was granted to Magellan's predecessor expired, and the U.S. Department of the Interior (DOI) has determined that it will not issue a renewed ROW permit for the section of the existing pipeline across federal lands. The DOI directed Magellan to take the pipeline out of service by October 1, 2022. Magellan initially considered permanently shutting down the pipeline, but a pending formal rulemaking by the U.S. Environmental Protection Agency (USEPA) that would mandate the availability of two special grades of gasoline, not currently available, for use in the state of Minnesota, may increase fuel shortages in this region if the pipeline is not restored to service. Therefore, the reroute Project is intended to ensure the continued adequate supply of the current and new gasoline and diesel fuels in western Minnesota and the surrounding region. While this pipeline is out of service, the distribution terminals connected to Magellan's pipeline system in this region will be connected to fewer supply sources, which will increase the likelihood for fuel shortages at those terminals if there are disruptions at the remaining supply sources. For example, Magellan can no longer efficiently transport refined products by pipe from refineries located in Oklahoma and Kansas to Magellan's terminals in western Minnesota, eastern South Dakota or eastern North Dakota since the pipeline segment from Sioux Falls, South Dakota to Marshall, Minnesota was taken out of service. Eliminating this bidirectional segment of pipe from Sioux Falls to Marshall reduces the reliability of fuel supply in this region.

1.1 Summary of Proposed Action

1.1.1 Pipeline

The proposed Project includes a 1.3-mile-long reroute of approximately 0.74 mile of the existing 8-inch-diameter pipeline located on lands managed by the USFWS and the NPS. Magellan discontinued service on the segment of the existing pipeline underlying the federal lands before October 1, 2022. Final deactivation and abandonment of this pipeline segment occurred in December 2022.

A copy of the Project overview map depicting the proposed Preferred Route is Figure 1.1-1. Detailed route maps are depicted on Figure 1.1-2. The maps are included in Appendix A, Figures, of this Application.

1.1.2 Associated Facilities

The Project's associated facilities include one permanent and five temporary access roads. Additionally, the aboveground appurtenances include a new cathodic protection system and pipeline markers. None of the access roads will require upgrades or improvement for the proposed Project activities. The cathodic protection system will include two additional test points and potentially one additional ground bed. The pipeline markers are typically placed at property lines to mark the pipeline easement. No aboveground facilities are planned for this Project (e.g., valves, building, structures).

1.2 Statement of Ownership

Magellan Pipeline Company, L.P. is a limited partnership authorized to do business in the state of Minnesota. Magellan is headquartered at One Williams Center, Tulsa, Oklahoma 74172, (918) 574-7000.

1.2.1 Applicant's Name and Contact Information

Magellan is the Applicant and will own and operate the Project. The Applicant's contact information is provided below:

Magellan Pipeline Company, L.P.
One Williams Center
Tulsa, Oklahoma 74172
(918) 574-7000

1.2.2 Authorized Representative's Name and Contact Information

Listed below are the authorized representatives and their respective contact information for the Applicant.

Christina K. Brusven
Fredrikson & Byron P.A.
200 South Sixth Street
Suite 4000
Minneapolis, Minnesota 55402-1425
(612) 492-7412
CBrusven@fredlaw.com

1.2.3 Contact Regarding Filing

Ross A. Crutchfield
Associate General Counsel
Magellan Pipeline Company, L.P.
One Williams Center
Tulsa, Oklahoma 74172
(918) 574-7499

1.2.4 Applicant's Signatories and Preparer

The Application was prepared by Magellan. The following individual is authorized to sign the Application on behalf of Magellan:

By: Brandon Cox
Title: Manager, Pipeline Integrity

1.3 Minnesota Public Utilities Commission Permit Process

Minnesota Statutes Section (Minn. Stat. §) 216G.02 requires that the Minnesota Public Utilities Commission (MPUC or Commission) issue a pipeline Route Permit for certain pipelines, including the Project, prior to construction. Magellan is submitting this Application for a Route Permit under the pipeline route selection procedures (Minnesota Administrative Rules [Minn. R.] Chapter 7852).

The Commission's routing process includes public information meetings in each county crossed by the proposed route, and comments will be accepted on the proposed route and potential alternative routes. Following the Commission's determination on acceptance of route alternatives and issues to be considered, the Minnesota Department of Commerce Energy Environmental Review and Analysis (DOC-EERA) will perform environmental review of the proposed route and accepted alternatives. The comparative environmental analysis completed as part of the route permit process satisfies the Minnesota

Environmental Policy Act environmental review requirements (See Minn. R. 4410.4400, Minn. R. 7852.1500 and *In re North Dakota Pipeline Co. LLC*, 869 N.W.2d 693, 697 [Minn. Ct. App. 2015]).

Following publication of the comparative environmental analysis, public and evidentiary hearings will be held, and an administrative law judge will prepare a report including findings of fact, conclusions of law and recommendations. The Commission will then consider the entirety of the record and hold a meeting to make a final decision regarding the route permit application. Minn. R. Ch. 7852 and the Commission's website include additional detail regarding the pipeline route permit process.

The Project does not require a Certificate of Need from the MPUC under Minn. Stat. § 216B.243 because it is not a large energy facility under the definition found in Minn. Stat. § 216B.2421, subdivision (subd.) 2(4) (i.e., the Project does not have more than 50 miles of its length in Minnesota).

2. PURPOSE AND OBJECTIVE

The purpose of the Project is to relocate the pipeline ROW and future operating and maintenance activities off federal lands managed by the USFWS and NPS. The existing 8-inch refined petroleum product pipeline underlying federal lands was deactivated and abandoned according to applicable federal regulations provided in Title 49 Code of Federal Regulations (CFR) § 195.402(c)(10) and 49 CFR § 195.59. Construction of the Project along the proposed reroute will allow the pipeline to return to service and deliver refined petroleum products to Minnesota, North Dakota, and South Dakota. Without the reroute, the communities surrounding Grand Forks and Fargo, North Dakota; Watertown and Sioux Falls, South Dakota; and Alexandria and Marshall, Minnesota, face potential supply challenges, which could lead to increased gasoline and diesel prices if current supplies are disrupted.

3. PROJECT DESCRIPTION

3.1 Background Information

Magellan is a common-carrier pipeline company that transports various grades of gasoline and diesel fuel from refineries in the Southwest and Midwest to distribution terminals in Minnesota, South Dakota, North Dakota and other states in the region. Prior to the deactivation and abandonment of the portion of the pipeline underlying the federal lands, the bidirectional pipeline was part of the pipeline system that transported gasoline and diesel to storage and distribution terminals; Marshall, Minnesota; Alexandria, Minnesota; Sioux Falls, South Dakota; Watertown, South Dakota; Fargo, North Dakota; and Grand Forks, North Dakota. Tanker trucks, not owned or operated by Magellan, load gasoline and diesel from these terminals to serve local demand in these areas.

Magellan deactivated and abandoned the 0.74-mile section of pipeline on federal lands, permanently removing this section from service, following state statute (Minn. Stat. § 216D.04, subd. 3(f)) and federal regulations (49 CFR § 195.402(10) and 49 CFR § 195.59). The 0.74-mile portion of the pipeline was purged of all refined product on October 1, 2022. The refined product within the pipeline was purged to remove residual petroleum products from the pipeline using a cylindrical device known as a “pig.” The refined product removed from the line was moved to Magellan’s Sioux Falls Terminal. After purging, the pipeline underwent cleaning using foam pigs. The pipe was cut, filled with nitrogen, and a cap was welded onto the exposed ends. In December 2022, final deactivation and abandonment occurred, and, cathodic protection was disconnected and all pipeline monitoring for this section was discontinued.

3.2 General Location

3.2.1 Proposed Project

The Project is located in Township 106 North, Range 46 West, Section 2 of Sweet Township and Township 107 North, Range 46 West, Sections 35 and 36 of Troy Township, Pipestone County, Minnesota.

3.2.2 Pipeline Design Specifications

Table 3.2-1 summarizes the design parameters of the pipe required for the Project. The pipeline design specifications outlined in the table will be designed and constructed to comply with all applicable state and federal rules and regulations.

Magellan will use heavier wall pipe with a wall thickness of 0.322 inch along the reroute. The minimum wall thickness requirement for pressure containment is calculated for the entire mainline to satisfy the desired maximum operating pressure, thereby ensuring the entire mainline can withstand normal operating pressure at designed wall thickness.

The determination of an appropriate pipeline wall thickness is governed by design criteria in the Code of Federal Regulations, which incorporates numerous factors, one being the pipe design factor, which is a safety factor provided in 49 CFR § 195.106(a). Another factor, the longitudinal seam factor, takes into consideration the method by which the longitudinal weld was completed and can be found in 49 CFR § 195.106(e). The specified minimum yield strength as provided in the table means the amount of stress required to induce permanent deformation of the steel as prescribed by the pipe’s manufacturing specification. Finally, the tensile strength is the maximum stress that the steel can withstand before breaking while being stretched or pulled.

Table 3.2-1: Magellan Project Pipe Specifications

Explanation	Specification
Pipe size (diameter)	8-inch outside diameter
Pipe type (grade)	X52 carbon steel pipe manufactured according to API Specification 5L PS2
Pipe wall thickness	
Nominal	0.322 inch
Road bore	0.322 inch
Cased railroad	NA
Uncased railroad	NA
HDD	0.322 inch
Estimated length	1.3 miles
Pipe design factor	0.6
Longitudinal seam factor	1.0
Class location and requirements	NA (applies to natural gas pipelines)
Coating, mainline	Fusion bond epoxy (14 mils) and abrasion-resistant overcoat (35 mils)
Coating, HDD and road bore	Fusion bond epoxy (14 mils) and abrasion-resistant overcoat (35 mils)
Specified minimum yield strength	52,000 psi
Tensile strength	66,000 psi

API = American Petroleum Institute; HDD = horizontal direction drill; NA = not applicable; psi = pounds per square inch

3.2.3 Operating Pressure

The maximum operating pressure of the relocated segment of the Magellan pipeline will be up to 1,440 pounds per square inch gauge (psig). The maximum operating pressure is based on Barlow's formula, which is a calculation used to show the relationship between internal pressure, allowable stress, nominal thickness, and diameter. The standard operating pressure ranges between 820 psig and 860 psig.

3.3 Associated Facilities and Accessibility

The Project's associated facilities include access roads and cathodic protection equipment. Because the proposed Project will relocate a segment of the existing Magellan pipeline between two existing mainline valve locations, no new valves or pump stations are proposed as part of the Project.

The Project's construction and operational activities will require one permanent and five temporary access roads, the majority of which are proposed on private property. Access Roads (ARs) 1 through 5 are temporary construction access roads. AR-6 is a permanent operational access road proposed to facilitate access to the Project during operation of the Project and is not proposed for use as a construction access road. Magellan will negotiate with landowners for the use of the private access roads and will restore them according to landowner agreements.

The Project will receive cathodic protection by tying into Magellan's existing impressed current systems. All cathodic protection connections including test station leads, bonding cables, and rectifier cables on the existing pipeline will be reconnected on the relocated segment. New cathodic protection test stations will

be installed along the Project. A cathodic protection test station is a wire or cable attached to an underground metallic structure (Magellan pipeline) that is encased in a PVC pipe that extends 3 to 4 feet above grade with a cap.

Magellan's existing impressed current system includes ground beds and rectifiers spaced out along the pipeline system. The system is monitored remotely and adjusted for changing conditions.

3.3.1 Valve Placement

No valves are proposed as part of this Project. Two existing manually operated valves are located 0.5 mile south and 4.9 miles north of the replacement section.

3.4 General Design and Operational Specifications

The Project will be designed and constructed in accordance with federal pipeline safety regulations, specifically 49 CFR Parts 194 and 195, and any applicable national technical standards, including American Society of Mechanical Engineers B31.4.

3.4.1 Product Capacity Information

The Project's design and annual capacity information assumes that refined petroleum products, including gasoline, diesel, and jet fuel will be transported on the Magellan pipeline.

Multiple variables determine the capacity of a pipeline. First, liquid pipelines are generally designed at a specified capacity for a known liquid, so a change in fluid characteristics (e.g., density and viscosity) of the transported liquids will affect the pipeline capacity. Additionally, liquids are also batched, meaning that different liquids are shipped at different times, generally in a repeatable sequence. Therefore, both the fluid characteristics and batch sequence will affect the pipeline capacity.

Two definitions are used to describe pipeline capacity: Design Capacity and Annual Capacity.

Design Capacity: The average capacity of the pipeline and pumping facilities, at its current or proposed design state for given types of liquids and their batch sequence. Design capacity is calculated assuming ideal operating conditions. Design capacity for the Project is 1,100 barrels per hour (bph) and the minimum capacity is 700 bph. Typical capacity of the existing pipeline is 1,050 bph.

Annual Capacity: The average sustainable pipeline throughput over a year. Annual capacity is calculated assuming historic average annual operating conditions. These operating conditions include scheduled and unscheduled maintenance, normal operating issues, and supply availability. Annual capacity of a pipeline is typically 90 percent of design capacity. Annual Average Capacity for the Magellan pipeline is 22,500 barrels per day.

3.4.2 Product Description

Magellan transports a wide variety of petroleum products. The products, generally described, are various fuels. Prior to deactivation and abandonment of the portion of the pipeline underlying the federal lands, this Magellan pipeline transported refined petroleum products, including diesel, gasoline, and jet fuel**.** The products shipped on the Magellan pipeline are not expected to change with the Project in service.

3.4.3 Safety Data Sheets

Safety Data Sheets for the refined petroleum products that may be transported on the Project are included in Appendix B.

3.5 Land Requirements

As proposed, the Project will require the acquisition of new ROW and temporary workspace on the private lands located west and north of the Monument in Pipestone, Minnesota. Land requirements have been minimized by the Project's Preferred Route, which was selected in coordination with landowners.

The Project will require the acquisition of 40 feet of new ROW in upland and wetland areas. In upland areas the Project will require 45 feet of temporary workspace; however, in wetland areas, the Project will reduce the temporary workspace to 35 feet to avoid impacts on wetlands. The proposed area necessary for new ROW is approximately 40 feet in width; however, in some locations only 30 feet of new ROW is necessary. Temporary construction workspace, approximately 45 feet in width in upland areas and 35 feet in width in wetland areas, will be located adjacent to and contiguous with the proposed new ROW corridor and will be identified by distinctive staking of construction limits prior to clearing. Additional temporary workspaces will be required at the two tie-in locations, HDD locations, and bore locations. A more detailed discussion of the land requirements is provided in the following sections.

3.5.1 Typical New Right-of-Way and Temporary Workspaces

As noted above, the Project's Preferred Route will follow a route on private lands generally west and north of the federal lands. Shown in Table 3.5-1 are the anticipated land requirements based on the location of the Preferred Route

Table 3.5-1: Anticipated Land Requirements

Land Type	Permanent ROW	Temporary ROW	ATWS Planned	Pipe Yard	Temporary Access Roads ARs-1-5	Permanent Access Road AR-6	Total
Upland (acres)	4.87	2.53	5.22	1.95	1.08	1.27	16.91
Wetland [a] (acres)	0.70	0.11	0.00	0.00	0.02	0.12	0.95
Total	**5.58**	**2.64**	**5.22**	**1.95**	**1.09**	**1.38**	**17.86**

[a] Wetland acreages based on USFWS National Wetland Inventory data (USFWS 2011)

ATWS = additional temporary workspace; ROW = right-of-way

Overall, the amount of new ROW to be acquired is anticipated to be limited to 6.96 acres (including permanent access road AR-6). In total, Project construction will affect approximately 17.86 acres of land.

3.5.2 Additional Temporary Workspace

In areas that require special construction methods, the Project's Preferred Route will require additional temporary workspace (ATWS). For example, Magellan will require ATWS in locations where special construction techniques such as HDD entry/exit sites, HDD pipe pullback sites, and boring at roads. Magellan will also require ATWS where the reroute pipeline is tied into the existing pipeline. Approximately 5.22 acres of ATWS will be required for construction.

3.5.3 Pipe Yards

Magellan is proposing the use of one pipe yard located on an upland parcel immediately west of 70th Avenue affecting approximately 1.95 acres.

3.5.4 Associated Facilities and Accessibility

The associated facilities for the Project are limited to two 15-foot-wide and three 25-foot-wide temporary access roads (ARs-1 through -5), one 15-foot-wide permanent operational access road (AR-6), and a new cathodic protection test station.

AR-1 will follow an existing graveled private drive for 0.17 mile from its intersection with 121st Street and will then cross a grassy area for 0.08 mile to reach the construction ROW. AR-2 is approximately 0.01 mile long extending northeast between AR-1 and the ROW near milepost 0.99. AR-3 extends north from 121st Street approximately 0.10 mile long and intersects the HDD ATWS near milepost 1.33. No improvements are planned for the access roads. The use of the access roads will affect about 2.47 acres of land.

The cathodic test stations will be installed adjacent to the road and will not need additional access roads. A potential deep well ground bed may be installed just north of Pipestone Creek. It will be accessed via the existing access road that the landowners use to gain access to that part of the property. A small bull-nose steel fence will be installed around the ground bed to protect it from being hit.

3.5.5 Trench Dimensions

Typical trench dimensions are included in Table 3.5-2. The total amount of soil excavated during construction will be approximately 6,000 cubic yards that will be separated, stored, and then returned to the trench during the Project's backfill operation.

Table 3.5-2: Typical Trench Dimensions

Description	Inches
Minimum ditch depth to allow for a nominal 54 inches of ground cover to the top of the pipe (54 inches of cover is required in cultivated lands)	66
Trench width at the bottom	34
Trench width at the top	34

3.5.6 Minimum Depth of Cover

In accordance with federal requirements (49 CFR § 195.248(a)), the depth of cover between the top of the pipe and the ground level, roadbed, or river bottom can range from 18 to 48 inches, depending on the location of the pipe and the presence of rock, which is provided below:

> § 195.248 Cover over buried pipeline.
>
> (a) Unless specifically exempted in this subpart, all pipes must be buried so that it is below the level of cultivation. Except as provided in paragraph (b) of this section, the pipe must be installed so that the cover between the top of the pipe and the ground level, road bed, river bottom, or underwater natural bottom (as determined by recognized and generally accepted practices), as applicable, complies with the following table:

Table 3.5-3: Minimum Depth of Cover Location

Location	Cover (inches)	
	For Normal Excavation	For Rock Excavation [a]
Industrial, commercial, and residential areas	36	30
Crossing of inland bodies of water with a width of at least 100 feet from high water mark to high water mark	48	18
Drainage ditches at public roads and railroads	36	36
Deepwater port safety zones	48	24
Gulf of Mexico and its inlets in waters less than 15 feet deep as measured from mean low water	36	18
Other offshore areas under water less than 12 feet deep as measured from mean low water	36	18
Any other area	30	18

[a] *Rock excavation is any excavation that requires blasting or removal by equivalent means.*

Based on site characteristics for this Project, these federal regulations allow a depth of cover of 30 inches. Where the pipeline crosses cultivated agricultural lands, state law (Minn. Stat. § 216G.07) requires that a minimum depth of cover of 54 inches be maintained, unless waived by the landowner. Magellan anticipates maintaining a minimum of 54 inches of cover. Magellan will maintain a minimum of 60 inches depth of cover beneath intermittent and perennial waterbodies. The amount of cover will be deeper for HDD crossings, which will be determined by site-specific requirements.

3.5.7 Right-of-Way Sharing and Paralleling

The pipeline replacement ROW does not parallel or share portions of other ROWs. There are no facilities within the near vicinity of the reroute that would result in similar or a reduction of environmental impacts than the proposed route.

3.5.8 Project Widths

The typical Project route width is 85 feet for construction, including 45 feet of temporary workspace and 40 feet of new permanent ROW.

3.6 Pipeline Estimated Costs

The total Project estimated cost is approximately $6 million.

3.7 Project Expansion

The Project has been designed to transport refined petroleum products at its anticipated annual capacity and has not been designed for expansion. There are no current plans for Project expansion.

3.8 Project Schedule

Table 3.8-1: Project Schedule

Milestone	Timeframe
Submission of Pipeline Route Permit Application	2nd Quarter 2023
MPUC Issuance of Pipeline Route Permit	1st Quarter 2024
Construction start date	2nd/3rd Quarter 2024
Anticipated construction completion	4th Quarter 2024
In-service date	4th Quarter 2024

4. RIGHT-OF-WAY PREPARATION AND CONSTRUCTION SEQUENCE

4.1 Environmental Controls

Magellan plans to use its Pipeline Construction Best Management Practices Plan (BMP Plan) found in Appendix C for this Project. The BMP Plan is a description of environmental construction techniques used to protect the environment and sets the minimum environmental standards that must be followed on the Project. The BMP Plan includes general environmental practices, construction, restoration, and notification procedures addressing soil erosion and sedimentation, wetland and waterbody crossings, spill prevention and containment, construction and hydrostatic test dewatering, etc. Magellan has developed standardized erosion control and restoration measures to minimize potentially adverse environmental effects associated with pipeline construction. These measures are described in more detail in Magellan's BMP Plan (Appendix C).

Magellan also plans to use the Unanticipated Discoveries Plan to set forth guidelines in the event archaeological resources or human skeletal remains are discovered during construction activities (Appendix D), and the HDD Inadvertent Return Mitigation Plan to minimize the impact of a potential inadvertent return of drilling fluid during HDD operations (Appendix E).

Magellan will also assign an Environmental Inspector (EI) to the Project. Environmental inspections will be conducted during construction and restoration activities. The EI acts as a resource for construction personnel and as a liaison among the contractor, Magellan's Project Management, and agency officials. The EI is responsible for assisting with pre-construction field tasks such as marking wetland and waterbody boundaries, clarifying environmental requirements, identifying possible issues and challenges ahead of construction, conducting environmental training of construction staff, offering advice and consultation to Magellan's contractors, and conducting inspections/monitoring in accordance with applicable laws, permits, and Project plans. Magellan's EI is required to document environmental compliance throughout the Project duration.

4.1.1 Construction Timing

Depending on when Magellan receives required permits, it may be able to start construction activities in the second or third quarter of 2024. Magellan anticipates that construction will be completed in approximately 3 months.

4.1.2 Preparing the Right-of-Way and Construction Sequence

Figure 4.1-1, in Appendix A illustrates the typical steps in pipeline construction. Pipeline construction includes survey and staking of the ROW, clearing and grading, topsoil stripping and soil segregation, pipe stringing, bending, welding/coating, inspection, trenching, lowering-in, backfilling, hydrostatic testing, cleanup, and restoration and revegetation, as explained in the following sections. Magellan's BMP Plan (Appendix C) includes more detailed information regarding the construction-related environmental policies, procedures, and protection measures that Magellan plans to implement in the preparation of the ROW and construction of this Project.

4.1.3 Construction Staking

Prior to construction, Magellan will stake the centerline and exterior boundaries of the construction ROW. Exterior boundary stakes will mark the limit of approved disturbance areas and will be maintained throughout the construction period. Magellan and its contractors will contact the Gopher One-Call System to identify and mark the locations of underground utilities. During staking, equipment involved in construction will be moved onto the ROW using existing roads for access wherever practicable. Once the

ROW is properly staked, traffic control measures will be implemented where the construction ROW intersects public roads to ensure both construction worker and public safety.

4.1.4 Clearing and Grading

Once the ROW is properly staked, clearing equipment is brought in to remove the existing vegetation. Vegetation will be cleared using mowing equipment in grass lands.

To protect Pipestone Creek and its associated wetlands, the Project has been designed to HDD the Pipestone Creek crossing. Therefore, no clearing of the wetlands associated with Pipestone Creek will be performed.

For the limited wetlands and waterbodies not associated with Pipestone Creek, a 15-foot vegetated buffer zone will be retained on both sides of the wetlands and waterbodies identified to be crossed using conventional pipeline trench construction. The surveyor will stake or flag vegetated buffer zones; the stakes or flagging will be retained until the pipeline is installed across the wetland or waterbody. Timber and brush within the vegetated buffer zones may be hand-cleared (i.e., no soil disturbance) as part of normal preconstruction ROW clearing, but stumps, root balls, and other vegetation will be left in place until pipeline installation occurs.

Timber mats will be installed in wetlands where soil conditions cannot support construction equipment without causing rutting or significant soil disturbance (see Figure Type II “Wet” Saturated Wetland Crossing typical in the BMP Plan in Appendix C). Additionally, mats will be placed at utility crossings where soil conditions are not adequate to support construction loads. Construction workspace will be reduced at wetland crossings to minimize impacts on wetlands.

4.1.5 Soil Segregation

Topsoil is separated from the subsoil because it has the highest concentration of organic matter and will enhance the revegetation process. Topsoil will be stripped and segregated from the full ROW width during construction in agricultural lands and other areas as requested by the landowner or as specified in the Project plans, commitments, and/or permits (see Topsoil Segregation typical in the BMP Plan in Appendix C). In non-saturated wetland areas, topsoil will be segregated using the ditch-plus-spoil side method (see the Type I “Dry” Wetland Crossing typical in the BMP Plan in Appendix C). Unless specifically requested by the landowner and/or in accordance with applicable permit conditions, topsoil will not be segregated in standing water wetlands (see the Type II “Wet” Saturated Wetland Crossing typical in the BMP Plan in Appendix C).

4.1.6 Stringing Pipe

Pipe, specifically fabricated for the Project, will be loaded from the pipe yard located west of 70th Avenue (along AR-4), onto specialized “stringing trucks” and transported to the construction ROW. Before excavating the pipeline trench, Magellan will lay out or “string” individual joints of pipe with an average length of 40 feet along the construction ROW and arrange the pipe to be accessible to construction personnel as shown on Figure 4.1-1. Small portable cranes and/or side-boom tractors are used to unload the stringing trucks and place the pipe along the ROW.

4.1.7 Bending and Welding/Coating and Inspection

A mechanical pipe-bending machine will be used to bend individual joints of pipe to the angle needed to accommodate changes in the natural ground contour or pipeline alignment. In certain areas where field bending is not practicable, prefabricated fittings will be used.

Although federal regulations require only 10 percent of the welds to be inspected, Magellan will field-inspect 100 percent of the welds and will apply coating at welded joints

4.1.8 Trenching and Lowering of the Pipeline

Construction personnel will use backhoes and/or ditching machines to excavate a trench approximately 5.5 feet deep. To the extent practicable, trench walls will be vertical. The trench will typically be 34 inches wide at the top. In unstable and saturated soils, the trench could be wider. The pipe will then be lowered into the trench using side-boom tractors.

At this point, construction survey crews will use precision global positioning system (GPS) equipment to mark the final position of the pipeline before being backfilled. This step will ensure adequate depth of cover has been achieved and that the pipeline is located properly within the easement.

At waterbody crossings, crews will use one of two construction methods for installing the pipeline: wet open-cut or HDD (see construction typicals in the BMP Plan in Appendix C). As discussed in Section 6.16.2, the wet open cut method is anticipated to be implemented at two crossing locations of unnamed intermittent stream USGS ID 130971648. The wet open-cut crossing method will include erosion control, bank stabilization, and bank revegetation, and will minimize construction impacts on the waterbodies. Pipestone Creek and unnamed waterbody USGS ID 130961031, will be crossed via the HDD method, which will avoid impacts on the waterbodies. The proposed new permanent access road (AR-6) will cross one unnamed intermittent stream USGS ID 130961050. Magellan proposes to use this road only for operations and will install and remove a temporary mat bridge to span the waterbody when access is needed for operations access.

To the extent that water accumulates in the trench, the trench will be dewatered. Trench dewatering will include the use of a pump, hose, and a filtering device. If water is discharged to a well-vegetated upland area, dewatering filter bags and controlled discharge rates will be used to minimize the potential for erosion and subsequent release of sediment into nearby surface water and wetlands. Dewatering may include use of a dewatering structure such as a straw bale dewatering structure with a geotextile filter bag to provide additional filtration near sensitive resource areas (see construction typical in the BMP Plan in Appendix C). Dewatering will be conducted in accordance with Section 3.8 of Magellan's BMP Plan (Appendix C) and applicable permits. Landowner approval is required in advance of placement of dewatering structures outside the approved construction ROW.

Road crossings will be completed using the road bore technique see Section 4.1.10. Using this technique, the road crossing is undetectable to the public and does not interfere with traffic.

4.1.9 Backfilling the Trench

After the pipe is placed in the trench, the trench will be backfilled to the approximate ground surface elevation. Construction debris will not be permitted in the backfill. If excessive amounts of rocks are included in the backfill, the pipeline will be protected with rock shield or similar protective coating and/or backfilled with clean padding before backfilling with rocky material.

4.1.10 Horizontal Directional Drilling/Boring

4.1.10.1 Horizontal Directional Drilling

The HDD method is a process that allows for trenchless construction by drilling a hole beneath a surface feature, such as a waterbody or other unique resource, and installing a prefabricated segment of pipeline through the hole. The method avoids disturbance to the ROW surface between the drill's entry and exit points and is sometimes used to install pipelines underneath sensitive resources or areas that present

difficulties using typical installation methods. HDDs can provide certain advantages over typical construction methods, such as avoidance of surface disturbance, riparian tree clearing, or in-stream construction.

To complete each HDD, a drill rig will be placed on the crossing's entry side and a small-diameter pilot hole will be drilled along a predetermined path beneath the surface feature using a powered drill bit. As drilling progresses, additional segments of drill pipe will be inserted into the pilot hole to extend the length of the drill. The drill bit will be steered and monitored throughout the process to maintain the designated path of the pilot hole. Once the pilot hole is complete, the electric sensor grid will be removed, and the hole will be enlarged to accept the pipeline.

To enlarge the pilot hole, a larger reaming tool will be attached to the end of the drill on the exit side of the hole. The reamer will be drawn back through the pilot hole to the drill rig on the entry side of the hole. One or more passes with progressively larger reaming tools will be required to enlarge the hole to a sufficient diameter to accommodate the pipeline.

Throughout the drilling process, a fluid mixture consisting of water and bentonite clay (a naturally occurring mineral) will be pumped into the drill hole to lubricate the bit, transport cuttings to the surface, and maintain the integrity of the hole.

The pipeline segment (also called a pull section) to be installed beneath the surface feature will be fabricated on the ROW or in the ATWS on the exit side of the crossing while the drill hole is reamed to size. Once assembled, the welds on the pull section will be coated with fusion-bonded epoxy. A sacrificial abrasion-resistant overlay will be applied over the fusion-bonded epoxy coating for protection from abrasive materials that may be encountered as the pull section is installed. The pull section will be inspected and hydrostatically tested prior to installation. A steel bullhead will be welded onto the front end of the pull section to aid in pulling the pipe through the drill hole. The pull section will be attached to the drill string on the exit side of the hole and pulled back through the hole toward the drill rig.

If an HDD crossing is successful, there are little to no impacts on the surface feature being crossed. However, if a natural fracture or weak area in the ground is encountered during drilling, an inadvertent return of drilling fluid to the environment could occur. Magellan has prepared and will implement the Project's HDD Inadvertent Return Mitigation Plan (Appendix E) that describes the procedures to follow in the event of an inadvertent return. If an inadvertent return occurs within or immediately adjacent to a wetland, the drilling contractor will immediately halt drilling activities, minimize drill rig activities to only what is necessary to prevent loss of the hole, notify the on-site supervisor and the EI to locate and install measures to contain the spread of the fluid, and begin fluid recovery. If an inadvertent return occurs within or adjacent to a waterbody, Magellan will consult with the appropriate state regulatory agencies, implement appropriate containment measures, recover drilling fluids while minimizing impacts to waterbody banks, and finally restore any disturbed areas.

4.1.10.2 Boring

Boring involves installing a short segment of prefabricated pipeline through a hole bored through the substrate. Where this method is implemented, equipment operating from pits excavated on either side of the crossing will bore a hole through the substrate beneath a road or other surface feature. The prefabricated section of the pipeline will be pulled through the hole under the waterbody. For long crossings, sections of pipe may be welded into a pipe string before being pulled through the borehole.

4.1.11 Hydrostatic Testing

After backfilling, Magellan will hydrostatically test the pipeline in accordance with Pipeline and Hazardous Materials Safety Administration (PHMSA) regulations. Hydrostatic testing ensures that the pipeline system is capable of operating at the design pressure. Hydrostatic testing involves filling a segment of the pipeline with water and maintaining a prescribed pressure for a specified amount of time. The length of test segments will be determined by topography and water availability. Hydrostatic test water use and discharge will be consistent with applicable permits. Hydrostatic test water will be discharged through a dewatering structure (see the Hydrostatic Test Dewatering Structure typical in Magellan's BMP Plan in Appendix C).

4.1.12 Restoration and Revegetation

After backfilling is complete, Magellan will regrade, restore, and decompact, as necessary, to preconstruction conditions to the extent practicable.

Topsoil will be re-spread over areas from which it was removed. Permanent soil stabilization efforts will primarily include ROW revegetation. Fences that were removed during construction will be reconstructed across the ROW.

Disposal of timber, slash, and rock will be in accordance with landowner preferences and applicable regulations. Slash will be stockpiled on the edge of the ROW, chipped, and spread across the ROW in upland areas, or hauled off-site, in accordance with applicable regulations. Excess rock will be stockpiled on site if requested by the landowner, or disposed of in an alternative, landowner-approved upland area or permitted landfill.

Typically, at waterbody crossings, banks will be restored as near as practicable to preconstruction conditions after backfilling is complete and the separated topsoil has been re-spread within the work areas. The work areas will then be seeded with an appropriate seed mix and covered with an erosion control blanket. Erosion controls (e.g., straw bales and silt fences) will be installed as necessary based on site-specific conditions as detailed in Section 3.4 of Magellan's BMP Plan (Appendix C). Bridges will be removed during final cleanup or, if access is needed, after final cleanup and permanent seeding.

Magellan will restore original land grade and contours to the extent practicable and will install permanent erosion controls devices to ensure restoration takes place. All disturbed areas will be revegetated in accordance with Magellan's BMP Plan (Appendix C), permit requirements, and site-specific landowner agreements. Magellan will also comply with other federal, state, and local rules and regulations as applicable.

After restoration is complete, Magellan contacts its affected landowners and/or tenants to discuss any outstanding issues related to Project completion on their respective property. Magellan will continue to work with each affected party to ensure cleanup and restoration conforms to the easement agreement.

4.2 Operation and Maintenance

As a refined products pipeline, the Project's design, construction, maintenance, and operation functions are regulated by PHMSA under 49 CFR Part 195, which governs transportation of hazardous liquids by pipeline. Magellan abides by all PHMSA regulations and works directly with various regional, state, and local agencies, landowners, tribal, and other stakeholders to ensure that its programs meet the needs of the community in which it operates. Limited maintenance of the permanent ROW is anticipated because of the land uses traversed by the Project, i.e., agricultural land, grassland, and emergent wetland.

5. ROUTE SELECTION PROCESS

5.1 Project Development Process

Minn. R. 7852.0100, subp. 31 defines “route” as the proposed location of a pipeline between two end points. A route may have a variable width from the minimum required for the pipeline ROW up to 1.25 miles. In developing the proposed pipeline route, Magellan evaluated the statutory and rule criteria (Minn. Stat. Ch. 216G and Minn. R. Ch. 7852), and overall environmental, ecological, engineering, and economic factors.

As demonstrated in this Application, Magellan performed an analysis of environmental and other sensitive resources in the vicinity of the Project using Geographic Information Systems (GIS) data, aerial imagery, topographic maps, site evaluations, affected landowners, and stakeholder input.

The Preferred Route follows the routing criteria, generally avoids constraints, and is designed to minimize overall impacts on the natural and human environment.

5.2 Routing Considerations

Potential routes are developed preferably to reduce new impacts by locating the pipeline adjacent to existing ROWs. Paralleling or sharing existing utility and/or transportation ROWs is a method for minimizing impacts on the natural and human environment according to Minn. R. 7852.1900, subp. 2. Two alternatives were considered and are described below and shown on Figure 5.2-1 in Appendix A, Figures. The features crossed by each alternative route are summarized in Table 5.2-1.

Magellan initially considered Alternative 1 to connect to the existing pipeline because it is the shortest route, approximately 0.9 mile in length. This route parallels the west side of 70th Avenue and the north side of 121st Street for almost its entire length and would impact about 7 acres of land. This route would have crossed lands owned by the Pipestone National Monument along 70th Ave and the USFWS along 121st Street within the NWR. Given that Magellan was not able to secure the necessary rights from NPS and USFWS for the continued operation of the existing pipeline, Alternative 1 was quickly eliminated from consideration. In addition to the issue with crossing federal lands, this route had the disadvantage of requiring permanent easement and potential construction workspace in the Woodlawn Cemetery owned by the City of Pipestone on the west side of 70th Avenue, and it is unknown whether unmarked burials occur within the designated cemetery.

Magellan also considered a route east of the federal lands to connect to the existing pipeline referred to as Alternative 2. This route is approximately 2.4 miles in length and would impact about 23.4 acres of land. Near the intersection of the existing pipeline, the alternative route would head south along the west side of 70th Avenue for 0.4 mile to the intersection with 9th Street Northwest. The route would then parallel an existing 115-kilovolt transmission line east for 0.3 mile. Alternative 2 would continue east for 0.4 mile crossing Hiawatha Park and Leon H. Moore Park. Upon reaching Hiawatha Avenue North, the route would head north on the east side of the road for 1.4 miles, crossing Fort Pipestone and Pipestone Family Campground, and paralleling Pipestone Creek for 0.3 mile as well as crossing the creek or its tributary three times. The route would tie in to the existing pipeline north of 121st Street. This route has the disadvantages of being the longest route considered, and crossing four recreational areas, 1.8 miles of the Pipestone Wellhead Protection Area, and potentially undisturbed native grassland mapped by the Minnesota Department of Natural Resources (DNR). Additionally, the DNR provided early coordination comments stating that sensitive features (e.g., native plant communities and public waters) should be avoided and recommended that Magellan consider a route west of these features (Appendix F, Agency Communications). Finally, Alternative 2 is in a more populated area and is within 500 feet of 23 dwellings and four other buildings.

Table 5.2-1: Feature Crossing Table

	Unit	Alternative 1[a]	Alternative 2[a]	Preferred Route[b]
ROUTE LENGTH AND CONSTRUCTION FOOTPRINT				
Length (total)	miles	0.9	2.4	3.1
Area Impacted	acres	7.0	23.4	13.4
ROUTING OPPORTUNITIES				
Collocation Opportunities (total)	miles	0.8	2.1	0.0
LAND OWNERSHIP				
Federal				
Pipestone National Monument				
Crossing Length	miles	0.2	0.0	0.0
U.S. Fish and Wildlife Northern Tallgrass Prairie National Wildlife Refuge				
Crossing Length	miles	0.4	0.0	0.0
County				
Crossing Length	miles	<0.1	0.0	0.0
LAND USES				
Land Use/Land Cover				
Developed				
Crossing Length	miles	0.6	0.8	<0.1
Area Affected	acres	2.2	5.4	0.4
Open Land				
Crossing Length	miles	0.2	0.6	0.7
Area Affected	acres	2.5	5.5	4.8
Agricultural				
Crossing Length	miles	0.1	1.0	0.5
Area Affected	acres	1.4	11.1	7.4
Open Water				
Crossing Length	miles	0.0	<0.1	0.0
Area Affected	acres	0.0	0.1	0.0
Recreation Areas				
Hiawatha Park				
Crossing Length	miles	0.0	0.1	0.0
Area Affected	acres	0.0	0.3	0.0
Pipestone Family Campground				
Crossing Length	miles	0.0	0.1	0.0
Area Affected	acres	0.0	0.1	0.0

	Unit	Alternative 1[a]	Alternative 2[a]	Preferred Route[b]
Fort Pipestone				
Crossing Length	miles	0.0	<0.1	0.0
Area Affected	acres	0.0	0.3	0.0
Leon H Moore Park				
Crossing Length	miles	0.0	0.3	0.0
Area Affected	acres	0.0	2.1	0.0
Residences and Other Structures				
Dwellings within 500 ft of the Centerline (total)	number	0	23	3
Other Structures within 100 ft of the Centerline (e.g., recreational/park buildings)	number	0	4	1
Cemeteries				
Cemeteries within 100 ft of the ROW (total)	number	1	0	0
NATURAL RESOURCES				
Wetlands				
Palustrine Emergent				
Crossing Length	miles	0.2	0.1	0.1
Area Affected	acres	1.0	1.3	0.5
Palustrine Forested/Shrub				
Crossing Length	miles	<0.1	0.0	
Area Affected	acres	<0.1	0.0	<0.1
Palustrine Unconsolidated Bottom				
Crossing Length	miles	0.0	0.0	<0.1
Area Affected	acres	0.0	0.0	<0.1
Freshwater Pond				
Crossing Length	miles	0.0	0.1	0.0
Area Affected	acres	0.0	0.2	0.0
Riverine				
Crossing Length	miles	<0.1	0.2	<0.1
Area Affected	acres	0.1	0.8	0.3
Waterbodies Crossings				
Perennial Waterbodies	number	1	3	1
Intermittent Waterbodies	number	1	1	2
Sensitive Plant Communities				
Area Affected	acres	0.5	0.2	0.8
Floodplain				

	Unit	Alternative 1[a]	Alternative 2[a]	Preferred Route[b]
Pipestone Creek Floodplain	miles	0.4	0.5	2.3
Wellhead Protection Area				
Pipestone Wellhead Protection Area	miles	0.0	1.8	0.0

[a] The crossing lengths presented in this table for all feature categories are based on hypothetical centerlines within the ROW for each alternative route. The acreages included in this table for all feature categories are based on hypothetical ROW.

[b] The crossing lengths presented in the table for all feature categories are based on the preferred route centerline. The acreages included in this table for all feature categories include ROW for the preferred route.

5.2.1 Description of Preferred Route

Based on the evaluation of the routes as well as agency and landowner feedback, Magellan developed the proposed Preferred Route. Although the proposed Preferred Route does not parallel existing utility or transportation corridors, it is designed to avoid agricultural drainage tiles and water resources (including Pipestone Creek and the adjacent 100-year floodplain) using the HDD method. Magellan will undertake geotechnical boring to help the Project engineers identify the physical properties of the soil and geology to support a successful HDD design. Magellan intends to use the results of the geotechnical boring to understand the subsurface extent of catlinite veins located outside of the Pipestone National Monument. The HDD method will be used to avoid any catlinite layers, a culturally sensitive and spiritually significant resource, that may be present at or near the ground surface within the Project area. The HDD will also minimize disturbance to the Sioux quartzite.

5.3 Field Surveys

Field surveys along the Preferred Route are scheduled for the second or third quarter 2023, weather permitting. Magellan's planned surveys include wetland and waterbody survey, cultural and tribal survey, and geotechnical boring. The results of the preliminary cultural resources reconnaissance are provided in Section 6.17, Cultural Resources.

6. ENVIRONMENTAL IMPACT OF PREFERRED ROUTE

6.1 Introduction

Section 6 discusses Magellan's agency outreach, the human and environmental setting of the Project, and potential human and environmental impacts associated with construction and operation of the Preferred Route. Magellan contracted with Environmental Resources Management, Inc. (ERM), to gather, examine, and analyze data on the following resources: the human settlement; environmental justice; transportation; noise; land use; public and designated lands; geology; vegetation; wildlife; fisheries; threatened, endangered, and special status species; groundwater; wetlands; waterbodies; cultural resources; and air quality. Each resource section within Section 6 contains a description of the existing environment, a discussion of construction impacts and mitigation, and a discussion of normal operating impacts and mitigation.

6.1.1 Agency Consultations

6.1.1.1 Federal Agencies

In a letter dated October 4, 2022, Magellan notified the USFWS and NPS that the existing 8-inch pipeline segment between Sioux Falls, South Dakota, and Marshall, Minnesota, including the portion under the federal lands, ceased operation by October 1, 2022, as directed by the DOI (Appendix F, Agency Consultations). In a letter dated December 19, 2022 Magellan informed the NPS and FWS that the deactivation and abandonment of the portion of the 8-inch pipeline that crosses under Pipestone National Monument and the Northern Tallgrass Prairie National Wildlife Refuge was complete and outlined the steps of the deactivation and abandonment process.

6.1.1.2 State Agencies

On September 1, 2022, Magellan sent introductory Project letters to the following state agencies:

- Board of Water and Soil Resources
- Minnesota Department of Agriculture
- Minnesota Department of Commerce
- Minnesota Department of Health
- Minnesota Department of Labor & Industry
- Minnesota Department of Natural Resources
- Minnesota Department of Transportation
- Minnesota Indian Affairs Council
- Minnesota Office of Pipeline Safety
- Minnesota Pollution Control Agency
- Office of the State Archaeologist
- State Historic Preservation Office

The Minnesota DNR provided comments in an email dated October 11, 2022. Based on a review of sensitive resource layers, the Minnesota DNR recommended routing the pipeline west and north of the existing (deactivated and abandoned) pipeline underlying the federal lands, conducting field investigations to refine the routing, and suggested using the HDD method to avoid water resources.

Magellan will continue working with state agencies on the Project. Copies of communications with state agencies are included in Appendix F, Agency Consultations and Appendix K, Nonpublic Disclosure.

6.1.1.3 Local Agencies

On September 1, 2022, Magellan sent introductory Project letters to the officials at the following local government units:

- City of Pipestone
- Grange Township
- Sweet Township
- Troy Township
- Pipestone County

As a follow-up to sending the introductory letters, Magellan held two in-person meetings on October 5, 2022, to provide a Project overview to local officials. The first meeting was with two Pipestone County Commissioners and the second meeting was with the Pipestone City Mayor and the Pipestone City Administrator. On March 30, 2023, Magellan sent letters to the officials listed above to inform them of filing the Application and inviting them to an in-person meeting on April 17, 2023, or virtually, as requested.

Based on comments received during these meetings, Magellan plans to schedule a meeting with the Board of Commissioners and will send the local officials a copy of the Route Permit Application after it is filed with the MPUC. The City of Pipestone recommended that Magellan conduct local and tribal outreach. Magellan is currently working with affected landowners to acquire easements. Magellan's outreach with American Indian tribes is summarized in Section 6.17, Cultural Resources.

Copies of communications with local agencies are included in Appendix F, Agency Consultations.

6.2 Human Settlement

In assessing potential Project impacts, the MPUC considers human settlement, including population demographic characteristics, future land use, and management plans. Magellan reviewed U.S. Census Bureau demographic data, reviewed the Pipestone County Comprehensive Plan (Pipestone County 2004), and coordinated with local officials.

6.2.1 Existing Environment

6.2.1.1 Human Population and Socioeconomic Conditions

The Preferred Route crosses through Sweet and Troy townships in Pipestone County and avoids the City of Pipestone, the closest population center to the pipeline route. Tables 6.2-1 and 6.2-2 show key population data and trends in Minnesota, Pipestone County, and local county subdivisions.

The population estimates from the U.S. Census Bureau American Community Survey 5-year estimate show Pipestone County with 9,370 people in 2021, a 2.3 percent decrease from the 2010 population, whereas the townships show an increase in population (U.S. Census Bureau 2021a). The median age of the populations in Pipestone County and its subdivisions range between 5 to 7 percent higher than the state. However, the trend suggests that a larger share of the residents who are age 18 and under reside in local jurisdictions when compared to the state.

Table 6.2-1: Populations in the Project Study Area

Location	Population 2010	Population 2021	Percent Change (%)	Median Age 2021	Population Under Age 18 2021 (%)	Population Over Age 65 2021 (%)
State of Minnesota	5,241,914	5,670,472	7.9	38.2	23.3	16
Pipestone County	9,570	9,370	-2	40.6	26.9	21
City of Pipestone	4,284	4,185	-2.3	40.1	26.6	23
Sweet Township	413	424	2.6	41.9	31.8	12
Troy Township	289	312	7.8	40.6	31.1	18

Sources: U.S. Census Bureau 2010, 2021a, 2021b

The majority of the Pipestone County population is white (87 percent) compared to 78 percent statewide. The majority of the populations in the local jurisdictions are also white. Hispanic populations and populations with two or more races represent the next highest percentages at the county and local levels. The City of Pipestone and Troy Township have a slightly higher Native American population than the County (U.S. Census Bureau 2021c).

Table 6.2-2: Population Demographic Characteristics

Location	Population	White, non-Hispanic (%)	Black or African American (%)	American Indian and Alaska Native (%)	Asian (%)	Native Hawaiian Pacific Islander (%)	Some Other Race Alone (%)	Two or More Races (%)	Hispanic or Latino (%)
Minnesota	5,670,472	78	7	1	5	<0.1	0.3	3	6
Pipestone County	9,370	87	0.2	1	1	0	0.2	3	8
City of Pipestone	4,185	85	0.2	2	0	0	0	3	10
Sweet Township	424	94	1	0	0	0	0	1	4
Troy Township	312	92	0	5	0	0	0	2	1

Source: U.S. Census Bureau 2021c

The economy in Pipestone County includes healthcare and social assistance, manufacturing, and educational services. At 2.9 percent, Pipestone County had a lower unemployment rate than the state in 2021. In the recession after the COVID-19 pandemic, the 2021 county unemployment rate decreased compared to 4.2 percent in 2020, and is lower than the 2019 pre-pandemic rate of 3.7 percent. Top industry employment for the county is in retail trade, manufacturing, and construction (MNDEED 2022).

No commercial or industrial operations are present or planned along the reroute. As discussed in Sections 6.6 and 6.7, approximately 8.92 acres of agricultural land are along the Preferred Route.

The Preferred Route will not cross any federal or state parks, recreational trails, or canoe or boating routes.

6.2.2 Construction Impacts and Mitigation

6.2.2.1 Human Populations and Socioeconomics

There are five landowners whose land may be impacted directly through construction activities or indirectly through construction noise and traffic, which includes the associated access roads. Magellan

has been working with the affected private landowners to address their concerns and negotiate necessary easements through notification in writing, direct phone calls, and in-person meetings.

Magellan anticipates overall that construction of the reroute will provide temporary beneficial impacts on local economies during construction. These benefits include material expenditures, workforce lodging, and grocery and restaurant expenditures.

6.2.3 Operations Impacts and Mitigation

6.2.3.1 Human Populations and Socioeconomics

Project operations and maintenance will have beneficial long-term effects on socioeconomics. Long-term economic benefits associated with operation will include increased tax revenues at the state and county levels in the form of property and/or ad valorem taxes.

Operation of the Preferred Route will allow the pipeline to return to service and deliver refined petroleum products to the region thereby minimizing the potential for supply challenges. Additionally, the continued use of transportation of the refined petroleum products via pipeline, rather than using more trucks for fuel shipment, would not increase wear and tear on public roads and would not increase vehicular accidents.

The Project will not have permanent economic impacts on agriculture because the construction workspace will be allowed to regenerate and continue to be farmed.

Additionally, Magellan does not anticipate that the operation of the Project will impact recreation because the Project crosses private lands of which approximately 0.8 mile will be directionally drilled.

6.3 Environmental Justice

Environmental justice (EJ) refers to the “fair treatment and meaningful involvement of all people regardless of race, color, national origin, income, and educational levels” (USEPA 2020; MPCA 2022). According to the USEPA Environmental Justice Glossary (USEPA 2020), a minority is defined as an individual who is a member of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. “Fair treatment” means that no group of people should bear a disproportionate share of negative environmental consequences as a result of industrial, governmental, and commercial operations or policies. Low-income populations are those that fall within the annual statistical poverty thresholds from the U.S. Office of Management and Budget (USEPA 2020). For 2021, the annual threshold for poverty ranges from $13,788 to $56,325 depending on family size (U.S. Census Bureau 2021a).

This desktop review considered the area crossed by the Preferred Route and follows federal guidance and recommend methodologies outlined by the Council on Environmental Quality and the Federal Interagency Working Group on Environmental Justice and National Environmental Policy Act Committee (USEPA 2016a). The purpose of conducting the desktop EJ review is an initial step to gather information regarding minority and/or low-income populations (i.e., EJ populations) and potential environmental quality issues and is a useful step in highlighting locations that may be candidates for further review.

In identifying potential areas of concern, federal guidelines state that the size of the area surrounding a project selected for the EJ assessment should be an appropriate unit of geographic analysis that does not artificially dilute or inflate the affected minority population. The selected area may be a neighborhood census tract or census block group (CBG), a governing body’s jurisdiction, or other similar geographic unit. The Minnesota Pollution Control Agency (MPCA) uses the census tract as the geographic unit for analysis (MPCA 2022). Census tracts have populations that can vary from 1,200 to 8,000 people, with an optimal size of 4,000 people. The geographic size of census tracts can vary widely depending on

population density. CBGs have populations that can vary from 600 to 3,000 people, with an optimal size of 1,500. The CBG is the smallest geographic unit for which U.S. Census Bureau demographic data are available and represents the geographic unit of analysis used in this desktop review because it provides the most robust information at a sub-county level for areas such as Pipestone County that are not heavily populated.

The USEPA defines Environmental Justice Areas or Environmental Justice Communities as locations that have a "meaningfully greater" percentage of minorities or low-income communities than the general population, or locations in which minorities comprise more than 50 percent of the affected area's population (USEPA 2016b). Minority communities are identified as those that have a minority population 10 percent greater than the reference county population or if the minority population comprises 50 percent or more of the affected area's population. Low-income communities are identified as those that have an equal or greater percentage of the households living below the federal poverty line, compared to the county reference population. According to the MPCA and the USEPA, areas within tribal reservations are also considered EJ communities (MPCA 2022).

This desktop review uses the 2017-2021 American Community Survey 5-year Estimates from the U.S. Census Bureau.

6.3.1 Existing Environment

The desktop review identified four CBGs within 1 mile of the Preferred Route, of which two CBGs are crossed by the Preferred Route. These CBGs are depicted on Figure 6.3-1 of Appendix A. Table 6.3-1 identifies minority and low-income populations in the analysis area and county reference population. The state of Minnesota is more racially and ethnically diverse than Pipestone County and the CBGs crossed by the Preferred Route. Two of the CBGs (Census Tract 4602, Block Group 2 and Census Tract 4603, Block Group 1) exceed the minority threshold, but neither CBG is crossed by the Preferred Route. One of the CBGs (Census Tract 4603, Block Group 1) exceeds the low-income threshold, but is not crossed by the Preferred Route.

Table 6.3-1: Minority Populations and Low-Income Populations

Location[a]	Population	White (Not Hispanic) (%)	Black or African American (%)	American Indian and Alaska Native (%)	Asian (%)	Native Hawaiian and Other Pacific Islander (%)	Some Other Race (%)	Two or More Races (%)	Hispanic or Latino (%)	Total Minority[b] (%)	Total Households Below Poverty Level (%)
Minnesota	5,670,472	78	7	1	5	<0.1	0.3	3	6	22	9
Pipestone County	9,370	87	0.2	1	1	0	0.2	3	8	13	11
Census Tract 4601, Block Group 1	844	86	0	3	2	0	0	2	7	14	8
Census Tract 4602, Block Group 2	989	77	0.1	3	0	0	0	0.1	20	23	8

Location[a]	Population	White (Not Hispanic) (%)	Black or African American (%)	American Indian and Alaska Native (%)	Asian (%)	Native Hawaiian and Other Pacific Islander (%)	Some Other Race (%)	Two or More Races (%)	Hispanic or Latino (%)	Total Minority[b] (%)	Total Households Below Poverty Level (%)
Census Tract 4603, Block Group 1	777	82	0	0	0	0	0	9	9	18	15
Census Tract 4604, Block Group 1	824	95	1	1	0.1	0	0	2	2	5	3

Source: U.S. Census Bureau 2021b,c

[a] *Bold font indicates the CBG is crossed by the Preferred Route.*

[b] *"Minority" refers to people who reported their ethnicity and race as something other than non-Hispanic White.*

6.3.1.1 Tribal Resources and Practices

As stated above, the MPCA designates areas within tribal reservations as EJ communities. The closest tribal reservation in Minnesota to the Project is the Lower Sioux Community, which is approximately 75 miles northeast of the Project. However, the Flandreau Santee Sioux Reservation in South Dakota is approximately 11 miles west of the Project area.

More broadly, effects on tribal members who visit the Project area, specifically the Pipestone National Monument, and others who are affiliated with the area and recognize the catlinite as a significant resource, could be considered as impacts on EJ communities. As discussed in Sections 6.7, Public Lands, and 6.17, Cultural resources, at least 23 tribes are culturally affiliated with Pipestone National Monument and consider it to be a sacred landscape.

6.3.2 Construction Impacts and Mitigation

Factors that could affect EJ communities include traffic, air, and noise impacts from construction. In general, the intensity of these impacts would be greater for individuals and residences closest to the Project facilities and would diminish with distance. No Project-related activities will take place in CBGs with potential EJ communities. The closest CBGs that exceed the EJ thresholds overlap with the City of Pipestone more than 0.5 mile from the Project. Potentially adverse environmental effects on surrounding communities, including EJ communities, would be minimized and/or mitigated.

6.3.2.1 Traffic

Traffic delays may occur during the 3-month pipeline construction period. The movement of construction personnel, equipment, and materials could result in short-term impacts on local traffic. Magellan is committed to minimizing traffic disruptions by transporting equipment and materials to the Project area during non-peak hours and coordinating with NPS, as appropriate, during periods of high cultural and recreational use of the Pipestone National Monument. Additionally, Magellan will obtain all necessary permits for road ROW crossings and plans to drill beneath 116th Street, the only road crossed by the Preferred Route. Therefore, traffic-related impacts on the Project area, including EJ communities, would be minor and of short duration.

6.3.2.2 Air Quality

Construction-related exhaust emissions and fugitive dust resulting in intermittent, short-term, and localized impacts on the immediate vicinity of construction work areas. To minimize construction emissions, Magellan will apply water to construction work areas, use crushed stone or gravel to stabilize road surfaces, and apply mulch with tackifiers in low traffic areas to stabilize disturbed soils. Based on these mitigation measures, the air quality impacts from construction of the Preferred Route are not anticipated to result in a significant impact on local air quality, including air quality impacts on EJ communities.

6.3.2.3 Noise

The heavy equipment needed to construct the Project will have an intermittent and temporary impact on existing noise levels in the vicinity of the construction workspace. General construction activities will occur between 7:00 a.m. and 7:00 p.m., Monday through Friday.

Magellan completed a noise impact analysis to estimate noise levels generated by trenchless construction (e.g., HDD and direct-bore) at the nearest noise sensitive area (NSA) within 0.5 mile of the trenchless construction entry and exit sites, including impacts on NSAs (visitor center and Sundance area) in Pipestone National Monument (see Section 6.5). The noise analysis identified one area of concern by NPS. The HDD to avoid the Sioux Quartzite outcrop, may result in a slight exceedance of the noise thresholds identified by NPS for a duration of 30 days.

Magellan's contractor will take reasonable measures to control construction-related noise, including limiting pipeline construction activities to daylight hours, maintaining equipment in good working order, and using manufacturer-supplied silencers when available. Additionally, Magellan will coordinate with tribes to avoid construction activities that generate higher noise levels during the Sundance ceremony, which typically occurs in late July or early August. Due to the short-term nature of the Project, and with the implementation of Magellan's proposed impact reduction measures, the Project is not anticipated to have a significant adverse noise impact on the area population, including EJ communities.

6.3.3 Operations Impacts and Mitigation

Magellan received feedback from tribal members about safety measures to minimize the potential for an inadvertent release of petroleum products on tribally sensitive resources during pipeline operation.

Safety is a prime consideration for Magellan's employees and contractors who will be operating and maintaining the pipeline system. PHMSA's regulations do require reporting of "anomalous conditions" in the pipeline that may cause "integrity issues" 49 CFR § 195.452(h), (m).

49 CFR § 195.452(i) requires a pipeline operator to "take measures to prevent and mitigate the consequences of a pipeline failure that could affect a high consequence area (HCA)," including through "conducting a risk analysis of the pipeline segment to identify additional actions to enhance public safety or environmental protection." Under 49 CFR § 195.450, an HCA is defined as any area that meets one of four types of areas, including an unusually sensitive area, which means a drinking water or ecological resource area that is unusually sensitive to environmental damage from a hazardous liquid pipeline release.

To meet or exceed PHMSA requirements for pipeline design, Magellan will implement the following:

- Heavier wall pipe along the entire route that is 50 percent thicker than the deactivated and abandoned pipeline segment underlying the federal lands
- Use of the highest quality external pipe coatings (fusion bond epoxy) to reduce the risk of corrosion and stress corrosion cracking

- Active cathodic protection applied to the pipeline
- Installation of the pipeline by HDD at the Pipestone Creek crossing and rock outcrop area
- Pipeline inspection and testing, including:
  - X-ray of 100 percent of the pipe welds
  - Remote monitoring of meters and pressure to identify adverse pressure changes and flowrate that could be attributable to potential leaks or releases
  - Periodic pipeline integrity inspection programs using internal inspection tools to detect pipeline diameter anomalies indicating excavation damage and loss of wall thickness from corrosion
  - Aerial surveillance inspections every 2 weeks to detect leaks and releases as early as possible and identify potential third-party activities that could damage the pipeline
  - Participation in "One-Call" notification systems

Magellan is equipped to prevent, detect, respond to, mitigate, and clean up any release effectively as required by 49 CFR Part 195 and with implementation of these safety measures, the Project is not anticipated to result in adverse or significant impacts on sensitive resources.

6.4 Transportation

6.4.1 Existing Environment

6.4.1.1 Roads

The pipeline will cross a city/township road and a private drive and six access roads will intersect (meet) three city/township and county roads as detailed in Table 6.4-1.

Table 6.4-1: Public Roads Crossed by or Intersecting with the Reroute

County	Milepost	Public Road Name	Road Type	Paved/Unpaved	Township/City	Road Crossing Type
Pipestone	AR-5 and AR-4	70th Ave (County 67)	Concrete	Paved	Sweet Township	Meets
Pipestone	0.2	116th Street	Bituminous	Paved	Sweet Township	Bore
Pipestone	AR-6	60th Avenue	Bituminous	Paved	Troy Township	Meets
Pipestone	0.9	Private Drive	Gravel	Unpaved	Troy Township	HDD
Pipestone	AR-1 and AR-3	121st Street (County 67)	Concrete	Paved	Troy Township	Meets
Pipestone	HDD Workspace	75th Avenue	Aggregate/gravel	Unpaved	Troy Township	Meets

AR = access road; HDD = horizontal directional drilling

The road crossing method is via the bore method. The Road Bore Method typical is included in the BMP Plan in Appendix C.

6.4.1.2 Railroads

The Project will not cross any active or inactive railroads.

6.4.1.3 Airports

Pipestone Municipal Airport is approximately 2.7 miles southeast of the Project. The airport is publicly owned and is classified as an “Intermediate System” by the State of Minnesota System Categories. The paved and lighted runway is 4,312 feet in length and can accommodate single-engine and most twin-engine aircraft, and some light-jet aircraft. The Project is outside of the municipal airport’s airspace zones.

6.4.2 Construction Impacts and Mitigation

6.4.2.1 Roads

Construction activities could result in short-term impacts on transportation infrastructure and traffic. The traffic volume along roads close to the pipeline reroute could increase due to the movement of construction equipment, material, and crews. Temporary road closures during construction are not anticipated. Impacts on local traffic levels during construction will be temporary and minor. Construction across any paved roads, highways, or roadways will be subject to the requirements of the necessary road crossing permits. Magellan will obtain these permits before starting construction.

The pipeline will be installed under paved roads using the HDD boring method as indicated in Table 6.4-1. This method will avoid disturbance of the road surface and allow traffic to continue to use the road unimpeded during pipe installation. However, some local traffic congestion may result as passing motorists slow down to view the construction and when construction vehicles cross the road or park along the road near the ROW. These impacts will be temporary and localized, occurring only during construction.

The Project’s construction and operational activities will require one permanent and five temporary access roads, all of which are on private property. Access Roads 1 through 5 are temporary construction access roads. AR-6 is an operational access road proposed to facilitate access to the ROW during operation of the Project. Magellan will negotiate with landowners for the use of the private access roads and will restore them according to landowner agreements.

Access to most of the construction workspace will be obtained using pre-existing public and private roads. Any damage to roads due to Project construction-related activities will be repaired by Magellan to the extent practicable. Following mobilization to the Project workspace, construction equipment will use a travel lane to be established within the construction workspace.

6.4.3 Operations Impacts and Mitigation

6.4.3.1 Roads

No long-term effects are expected on roads crossed by the reroute. Road functions will be restored after construction including, but not specifically limited to, full restoration of vehicular traffic that may have been impeded during construction, repair of damage to the road surface caused by construction, and removal and restoration of access points installed to facilitate ingress/egress to the construction workspace. Magellan will also mitigate and restore any temporary road impacts that may result from subsequent Project maintenance activities.

6.5 Noise

6.5.1 Existing Environment

The Project will involve relocating an existing pipeline segment. Because the Project does not involve any aboveground facilities, a baseline noise analysis was not completed. The NPS completed acoustical monitoring to characterize the baseline soundscape at the Pipestone National Monument. Sound levels were collected over a 37-day period at the Sundance Grounds in the spring of 2013. Table 6.5-1 presents the results of the acoustical monitoring.

Table 6.5-1: Sound Levels at Pipestone National Monument

Location/Time	L_{10} (dBA)	L_{50} (dBA)	L_{90} (dBA)
Sundance Grounds / Daytime (0700 to 1900)	43.4	36.7	33.2
Sundance Grounds / Nighttime (1900 to 0700)	40.3	35.4	32.7

Source: Pipestone National Monument Natural Resource Condition Assessment (NPS 2016)

dBA = A-weighted decibel; L_{10} = sound level exceeded 10 percent of the measurement period; L_{50} = sound level exceeded 50 percent of the measurement period; L_{90} = sound level exceeded 90 percent of the measurement period

During NPS baseline monitoring activities, noise sources contributing to the baseline sound levels included anthropogenic noise (aircraft, vehicle traffic, and people) and natural sounds (birds, amphibians, wind, deer and insects).

The MPCA has established noise standards in Minn. R. Ch. 7030. The noise standards, presented in Table 6.5-2, are based on noise area classifications. In general, noise area classification 1 represents land used for residential, educational, religious, and cultural activities and is the majority of the land in the Project area.

Table 6.5-2: Minnesota Noise Standards

Noise Area Classification	Daytime		Nighttime	
	L_{10} (dBA)	L_{50} (dBA)	L_{10} (dBA)	L_{50} (dBA)
1	65	60	55	50
2	70	65	70	65
3	80	75	80	75

Source: Minn. R. 7030.0040

The NPS has not established a noise criteria for sound levels affecting the Monument; however, in the Pipestone National Monument Natural Resource Condition Assessment identified an L_{50} of 45 decibels on the A-weighted scale (dBA) or greater as warranting significant concern (NPS 2016).

6.5.2 Construction Impacts and Mitigation

The heavy equipment needed to construct the Project will have an intermittent and temporary impact on existing noise levels in the vicinity of the construction workspace. Typical pipeline construction equipment (including bulldozers, loaders, backhoes, and sideboom tractors) generate from 80 to 90 dBA within 50 feet of the equipment. The equipment noise will be limited to the construction period. Standard pipeline construction is transient in nature and noise impacts are limited to areas of active construction and moves in a linear fashion along the pipeline route. However, trenchless construction methods (direct-bore and

HDD) can generate higher noise levels than standard pipeline construction and, depending on the length of the crossing, may last longer at one location.

A noise impact analysis was prepared to estimate noise levels generated by trenchless construction at the nearest noise sensitive area (NSA) within 0.5 mile of the trenchless construction entry and exit sites. The NSAs range between 250 feet to 1,100 feet from the trenchless construction entry and exit sites. Table 6.5-3 presents the results of this assessment. Although the Monument is greater than 0.5 mile from construction activities, a separate noise impact analysis was prepared to assess noise impacts from trenchless construction on the Monument. Table 6.5-4 presents the results of this assessment. Because noise from trenchless construction will be continuous, the equivalent noise level for the activity will be the same as the L_{50}. Appendix G provides the calculation details for the noise analysis. The location of the NSAs is shown on Figure 6.5-1.

Table 6.5-3: Noise from Trenchless Crossings at Noise Sensitive Areas

Trenchless Crossing Location	Distance (feet) / Direction to Nearest NSA	NSA Type	Trenchless Construction Noise at NSA (L_{50} dBA)	Existing Daytime Ambient (L_{50} dBA) [a]	Combined Trenchless Construction Noise + Ambient (L_{50} dBA)	Potential Noise Increase During Trenchless Crossing (dBA)	Trenchless Crossing Duration
116th Street Entry	275 / NW	Cemetery 1	56.7	36.7	56.7	20.0	5 days
116th Street Exit	250 / W	Cemetery 1	57.6	36.7	57.6	20.9	
Cumulative 116th Street Crossing [b]	--	Cemetery 1	60.2	36.7	60.2	23.5	
Pipestone Creek Entry	500 / E	Cemetery 2	61.9	36.7	61.9	25.2	20 days
Pipestone Creek Exit	520 / NE	Residence 1	49.5	36.7	49.7	13.0	
Homestead Crossing Entry	330 / NE	Residence 1	65.9	36.7	65.9	29.2	20 days
Homestead Crossing Exit	290 / SW	Residence 2	55.2	36.7	55.2	18.5	
Sioux Quartzite Crossing Entry	740 / SW	Residence 2	57.9	36.7	57.9	21.2	30 days
Sioux Quartzite Crossing Exit	1,100 / SE	Residence 3	41.6	36.7	42.8	6.1	

dBA = A-weighted decibel; L_{50} = sound level exceeded 50 percent of the measurement period; NE = northeast; NSA = noise sensitive area; NW = northwest; SE = southeast; SW = southwest; W = west

[a] *Source: Pipestone National Monument Natural Resource Condition Assessment (NPS 2016)*

[b] *Nearest NSA to 116th Street entry and exit location is the same NSA.*

Table 6.5-4: Noise from Trenchless Crossing at Pipestone National Monument

Trenchless Crossing Location	Distance (feet) / Direction to Nearest NSA	NSA Type	Trenchless Construction Noise at NSA (L_{50} dBA)	Existing Daytime Ambient (L_{50} dBA) [a]	Combined Trenchless Construction Noise + Ambient (L_{50} dBA)	Potential Noise Increase During Trenchless Crossing (dBA)	Trenchless Crossing Duration
116th Street Entry	2,720 / SE	Pipestone National Monument	31.5	36.7	37.8	1.1	5 days
	2,550 / NE	Sundance Area 1	32.4	36.7	38.1	1.4	
116th Street Exit	2,710 / SE	Pipestone National Monument	31.6	36.7	37.9	1.2	
	2,520 / NE	Sundance Area 1	32.5	36.7	38.1	1.4	
Pipestone Creek Entry	3,250 / SE	Pipestone National Monument	40.0	36.7	41.7	5.0	20 days
	2,420 / E	Sundance Area 2	44.1	36.7	44.8	8.1	
Pipestone Creek Exit	4,220 / SE	Pipestone National Monument	24.2	36.7	36.9	0.2	
	2,580 / SE	Sundance Area 2	31.2	36.7	37.8	1.1	
Homestead Crossing Entry	4,210 / SE	Pipestone National Monument	36.2	36.7	39.5	2.8	20 days
	2,530 / SE	Sundance Area 2	43.5	36.7	44.3	7.6	
Homestead Crossing Exit	3,830 / S	Pipestone National Monument	25.7	36.7	37.0	0.3	
	1,970 / S	Sundance Area 3	34.7	36.7	38.8	2.1	

Trenchless Crossing Location	Distance (feet) / Direction to Nearest NSA	NSA Type	Trenchless Construction Noise at NSA (L_{50} dBA)	Existing Daytime Ambient (L_{50} dBA) [a]	Combined Trenchless Construction Noise + Ambient (L_{50} dBA)	Potential Noise Increase During Trenchless Crossing (dBA)	Trenchless Crossing Duration
Sioux Quartzite Crossing Entry	3,890 / S	Pipestone National Monument	37.4	36.7	40.1	3.4	30 days
	1,970 / S	Sundance Area 4	46.7	36.7	47.1	10.4	
Sioux Quartzite Crossing Exit	4,110 / SW	Pipestone National Monument	24.6	36.7	37.0	0.3	
	2,280 / SW	Sundance Area 5	32.8	36.7	38.2	1.5	

dBA = A-weighted decibel; E = east; L_{50} = sound level exceeded 50 percent of the measurement period; NE = northeast; NSA = noise sensitive area; S = south; SE = southeast; SW = southwest

[a] *Source: Pipestone National Monument Natural Resource Condition Assessment (NPS 2016)*

As presented in Table 6.5-3, noise from trenchless construction may result in daytime L_{50} noise levels between 42.8 and 65.9 dBA and noise increases between 6.1 and 29.2 dBA at the nearest NSAs. The MPCA daytime noise standard of 60 dBA L_{50} may be exceeded at three locations; however, these exceedances will be temporary and restricted to daytime hours only. Therefore, the impacts on NSAs will be temporary and minor.

As presented in Table 6.5-4, noise from trenchless construction may result in daytime L_{50} noise levels between 36.9 and 47.1 dBA and noise increases between 0.2 and 10.4 dBA at the Monument near the visitor center and at the Sundance Area. An L_{50} of 45 dBA, previously identified as a level of concern by the NPS, may be exceeded at one location for a duration of 30 days. Because of the temporary nature of pipeline construction, this impact will be minor and will not result in long-term effects on the Monument or its recreational and cultural uses.

The contractor will take reasonable measures to control construction-related noise, including limiting pipeline construction activities to daylight hours, maintaining equipment in good working order, and using manufacturer-supplied silencers when available.

6.5.3 Operations Impacts and Mitigation

Following construction, the pipeline will not generate noise during normal operations.

6.6 Land Use

6.6.1 Existing Environment

6.6.1.1 Land Ownership and Land Cover

Land use classifications are based on the National Land Cover Database (USGS 2019). As shown in Table 6.6-1, 17.86 acres of land will be affected by construction. Approximately 6.96 acres will be permanently affected by the establishment of a new permanent ROW (5.58 acres) and one new permanent access road (1.38 acres). The predominant land cover within the overall Project construction workspace (including access roads) is agriculture, covering approximately 8.92 acres (or approximately 50 percent of total area affected by the Project). Agricultural land within the Project area is primarily cultivated corn and soybean crops. The next most-prevalent land cover affected is open land consisting of approximately 6.19 acres (or approximately 35 percent) of total area affected by the Project. Open lands within the Project area consist primarily of hay pasture and other upland herbaceous vegetation (e.g., prairie). Approximately 1.74 acres (or approximately 10 percent) is developed land. Developed lands are characterized as having 30 percent or greater of constructed materials, which includes asphalt, concrete, and buildings. Of the remaining areas affected by the Project, approximately 0.95 acre (or approximately 5 percent) of the land affected is wetland and 0.07 acre (less than 1 percent) is forested land. Affected wetland areas are characterized as palustrine emergent wetlands, palustrine scrub-shrub wetlands, palustrine unconsolidated bottom, and riverine. Forested lands are dominated by deciduous trees and woody shrubs.

Table 6.6-1: Land Use

Land Use Cover Type	Permanent ROW (acres)[a]	Temporary ROW (acres)[a]	ATWS Planned (acres)[a]	Pipe Yard (acres)	Temporary Access Roads ARs-1-5 (acres)[a]	Permanent Access Road AR-6 (acres)[a]	Total (acres)[a,b]
Agriculture	2.33	1.63	3.48	0.42	0.48	0.58	**8.92**
Developed	0.17	0.10	0.10	0.99	0.35	0.03	**1.74**
Forest	0.07	0.00	0.00	0.00	0.00	0.00	**0.07**
Open Land (Hay Pasture Herbaceous)	2.31	0.80	1.64	0.54	0.24	0.66	**6.19**
Wetland [c]	0.70	0.11	0.00	0.00	0.02	0.12	**0.95**
Total [b]	**5.58**	**2.64**	**5.22**	**1.95**	**1.09**	**1.38**	**17.86**

ATWS = additional temporary workspace; ROW = right-of-way

[a] Areas in this table include the areas that would be avoided via the use of HDDs.

[b] Addends may not sum to total due to rounding.

[c] Wetland acreages based on USFWS National Wetland Inventory data (USFWS 2011).

6.6.2 Construction Impacts and Mitigation

6.6.2.1 Land Ownership and Land Cover

The Project will utilize existing easements it has with three landowners and will acquire new easements from two landowners. As of March 2023, Magellan is working to reach easement agreements with these two landowners.

A majority of the land uses affected by the Project will be returned to preconstruction conditions with no permanent impacts or change in land use. The one exception is the new permanent access road (AR-6), which will result in 1.38 acres of permanent impact associated with the Project primarily affecting agricultural and open lands. Additionally, of the 1.3-mile-long Project route, about 0.81 mile will be constructed via the HDD method, which will significantly limit temporary surface disturbance.

Agricultural Land

Project construction will result in approximately 8.92 acres of impact on agricultural land, of which 3.96 acres are associated with pipeline construction, 3.48 acres of ATWS, 0.42 acre of pipe yard, and 1.06 acres of access road. Potential impacts on agricultural land associated with construction include temporary reduction in agricultural production for cultivated land. With the exception of the permanent access road AR-6 (0.58 acre), impacts on agricultural land will be temporary and the land will be restored for continued agricultural use (see Sections 6.10.2 and 6.10.3 for impacts and mitigation of construction and operations on vegetation).

Open Land

Construction of the Project will result in approximately 6.19 acres of impact on open land, of which 3.11 acres are associated with pipeline construction, 1.64 acres of ATWS, 0.54 acre of pipe yard, and 0.90 acre of access road. After final construction cleanup, the majority of open lands will be restored to preconstruction conditions (see Sections 6.10.2 and 6.10.3 for impacts of construction and operations on

vegetation). The one exception will be the 0.66 acre of open land associated the permanent access road, AR-6.

Developed Land

The Project will result in approximately 1.74 acres of impact on developed land, of which 0.27 acre is associated with pipeline construction, 0.10 acre of ATWS, 0.99 acre of pipe yard, and 0.38 acre of access road. During construction, temporary land use impacts on developed land may occur due to short-term increases in construction-related noise and dust. Construction-related dust emissions will generally be of short duration and dependent on soil type, weather conditions, and the extent of ground disturbance. The construction workspace and access roads will be sprayed with water as needed to control dust during active construction. Noise impacts due to construction equipment will be temporary and limited to daytime work hours.

Wetland

The Project has the potential to affect approximately 0.95 acre of wetland, a majority of which are associated with pipeline construction. Most of the wetland areas potentially affected by pipeline construction will be avoided by HDD. Any impacts on wetlands will be temporary and there will be no loss of wetlands (see Section 6.15, Wetlands). Based on National Wetlands Inventory (NWI) mapping, both AR-1 and AR-2 will each affect about 0.01 acre of wetland. The wetland occurs on a section of the existing access road (AR-1); therefore, it will not result in new wetland impact. AR-2 appears to be an existing unpaved, grassy two-track road. A 0.01-acre section of palustrine unconsolidated bottom (PUB) wetland is mapped by the NWI as being located within AR-2; however, the actual extent and location of the wetland will be identified during a field delineation, and wetlands are anticipated to be avoided. AR-6 is an existing two-track road through agricultural fields that crosses approximately 0.12 acre of wetland. The use of AR-6 is proposed for use only during operations. If saturated conditions exist during planned use of the road, Magellan will install mats across the wetland to minimize impacts.

Forest Land

The Project has the potential to affect 0.07 acre of forest land. Magellan anticipates that forested land will be avoided by HDD construction resulting in no impact on forest land (see Sections 6.10.2 and 6.10.3 for impacts of construction and operations on vegetation).

6.6.3 Operations Impacts and Mitigation

Following construction, about 6.96 acres will be retained for operational use including 5.58 acres of permanent ROW and 1.38 acres of new permanent access road (AR-6). In general, lands affected by construction will be restored to their previous land use with no permanent impact on land use. The construction of, and permanent use of, AR-6 will result in the conversion of 0.58 acre of agricultural land, 0.66 acre of open land and 0.12 acre of wetland to developed land; however, no improvements are planned for the road and the wetland will be temporarily matted if saturated conditions are present.

6.7 Public and Designated Lands

6.7.1 Existing Environment

Public lands within 1 mile of the Project include two federally managed lands (the Pipestone National Monument and the Northern Tallgrass Prairie NWR), the King of Trails Scenic Byway (Highway 75), and three Pipestone city parks (Hiawatha Park, Leon H. Moore Park, and Westview Park), as shown on Figure 6.7-1 in Appendix A.

6.7.1.1 Pipestone National Monument

The Pipestone National Monument is significant for its history of American Indian and European American contact and exploration in the early 1800s, specific quarrying rights, and the Pipestone Indian School (1893 to 1953).

The Pipestone National Monument, which currently encompasses 301 acres, was established in 1937 and expanded in 1956 to protect catlinite (pipestone) quarries and the native tallgrass prairie ecosystem as well as preserve the tradition of quarrying on the property. The Pipestone National Monument was created on the former Pipestone Indian Reservation (created in 1858) and subsequent Pipestone Indian School, established in 1893 (NPS 2017, 2020a). Pipestone National Monument is recorded as an archaeological site and is listed on the National Register of Historic Places for its cultural importance, archaeological resources, and the petroglyphs located on the property.

The Pipestone National Monument is considered sacred by many tribes because of the pipestone as well as the native prairie plants and animals, ceremonial uses of the landscape, and ancestral connections. Pipestone has been quarried by American Indians for approximately 3,000 years and the quarries in the Pipestone National Monument remain a pilgrimage location and a site of sacred importance for many American Indians. The site is still actively quarried today by American Indians enrolled in federally recognized tribes, including 23 tribal nations the NPS recognizes as having cultural affiliation with the monument (NPS 2020b). Tribal members quarry pipestone and carve it into objects, including pipestone pipes, for ceremonial uses and sacred rituals such as individual and group pipe ceremonies, prayer and tobacco offerings, sweat lodges, sun dances, and vision quests; some of these ceremonies are still conducted at the Pipestone National Monument. At one time there were also numerous petroglyphs on the quartzite outcroppings in the area, including 35 slabs of rock containing 79 petroglyphs surrounding the Three Maidens rock formation, which were subsequently removed; 17 of these slabs are located in the visitor center and the location of the remaining 18 is unknown.

The Pipestone National Monument includes a visitor center and the Circle Trail, a 0.75-mile-long trail to view the pipestone quarries and Winnewissa Falls. The visitor center contains natural and cultural interpretive exhibits of resources collected within the monument, including the display of petroglyphs. During the summer, there are demonstrations about the cultural and historic significance of the area, including demonstrations of pipe making by local American Indian artists (NPS 2017, 2021).

In addition to the physical landscape, the NPS has identified night skies, soundscape, and viewshed as parts of the Pipestone National Monument's ethnographic and sacred landscape that are affected by external impacts such as nearby development, roads, and other noise (NPS 2017).

Additional information about the National Monument is included in Section 6.17.3, Natural Resources as Cultural Resources.

6.7.1.2 Northern Tallgrass Prairie National Wildlife Refuge

The Pipestone Unit of the Northern Tallgrass Prairie NWR, located north of, and adjacent to, the Pipestone National Monument, is a 113.36-acre parcel managed by the USFWS. It was created when the Pipestone Indian School closed in 1953 and the land was transferred to the State of Minnesota DNR and the USFWS as the Pipestone Wildlife Management Area. In 2019, the USFWS took full custody and incorporated it into the Northern Tallgrass Prairie NWR to preserve and restore some of the tallgrass prairie in the region. The property includes Indian Lake, remnant prairie, and a walking trail, and is open to hunting small game, trapping, and deer hunting with archery (NPS 2020a; USFWS 2022; Pipestone County Star 2019).

6.7.1.3 King of Trails Scenic Byway (Highway 75)

The King of Trails Scenic Byway (Highway 75) traverses the entire United States, from Winnipeg, Canada, to the Gulf of Mexico, including 414 miles near Minnesota's western border, a portion of which is located 0.7 mile east of the Project.

6.7.1.4 City Parks

Three city parks are located within 1 mile of the Project, including Hiawatha Park, Leon H. Moore Park, and Westview Park.

Hiawatha Park is approximately 0.8 mile southeast of the Project. It is home to the Hiawatha Lodge, constructed in 2015, which is a rental space for a variety of social gatherings. This park also offers picnic areas and a fishing pond.

Leon H. Moore Park is approximately 0.9 mile southeast of the Project and offers a skate park, picnic shelter, and playground. This park is also home to the historic District 3 Farmer School that was built in 1880 as part of the country school system. The building is owned by the Pipestone County Historical Society and seasonally open for tours and public viewing.

Westview Park is approximately 0.9 mile south of the Project. The park offers walking paths, a playground, basketball court, disc golf course, an amateur baseball field, youth baseball, and concession stands.

6.7.2 Construction Impacts and Mitigation

A portion of the existing temporary AR-1 occupies about 0.02 acre of land within the Pipestone NWR where the access road intersects 121st Street. No impacts are anticipated on the federal lands with the use of this existing road. Impacts during construction could include potential traffic disruption on 121st Street, noise, dust, and visual impacts. These impacts will be temporary and will be minimized by implementation of Magellan's BMPs. Magellan will coordinate with the Pipestone National Monument regarding potential traffic disruption during periods of increased visitor use.

6.7.3 Operations Impacts and Mitigation

No operations impacts are anticipated on public lands. The area affected during construction within the Northern Tallgrass Prairie NWR at the intersection of AR-1 on 121st Street, is an existing road and will be restored following construction.

6.8 Geology

6.8.1 Existing Environment

6.8.1.1 Bedrock and Surface Geology

The surficial geology in the Project area consists of Quaternary-age (less than 2.6 million years old) clay, silt, sand, and gravel that were deposited due to the actions of glaciers (till), streams, and wind (loess). These young Quaternary sediments were deposited on top of the Precambrian (1.6 to 1.7 billion years old) Sioux Quartzite, which consists of quartzite (metamorphosed sandstone) and minor amounts of pipestone (clay), clayey siltstone, and silty mudstone (NPS 2017).

The quartzite layers within the Sioux Quartzite are characterized as dense, cemented, well-sorted quartz sand grains and are highly resistant to weathering. The unique pipestone only found in this area is referred to as catlinite, which consists of clay minerals of pyrophyllite, diaspore, muscovite, and kaolinite

with trace hematite that lends the characteristic red color. Catlinite is the only pipestone that contains little or no quartz (NPS 2017).

Regional maps of depth-to-bedrock show the majority of the Project area will intersect soils where depth to bedrock is over 78 inches, except where the Project crosses the Ihlen silty clay loam and the Ihlen-Rock outcrop complex, which has a depth to bedrock of about 30 inches (Soil Survey Staff 2022). In this area between about MPs 1.1 and 1.3, the Project will cross these soils and the underlying Sioux Quartzite outcrop using the HDD method to minimize excavations within the hard bedrock.

Apart from the north-south trending Sioux Quartzite outcrop that forms a hill on the eastern end of the Project, the topography crossed by the Project is relatively flat or rolling due to the grinding actions of glaciers, which were active as recently as 20,000 years ago during the Pleistocene epoch (NPS 2017). Elevations in the Project area range from approximately 1,630 to 1,730 feet above mean sea level.

Based on review of the U.S. Geological Survey (USGS) Quaternary Faults and Folds database (USGS 2022a), no faults have been active in the Quaternary period near the Project area. In 1964, Pipestone, Minnesota, was the epicenter of a 3.4-magnitude earthquake, which is the only recorded earthquake in the region (Chandler 1994). Based on the tectonic history of the region and absence of active faults and significant earthquakes, seismic activity in the Project area is anticipated to be unlikely.

6.8.1.2 Mineral Resources

Based on a review of publicly available mining data (USGS 2011), available aerial imagery (Esri 2021), and a USGS topographic quadrangle (USGS 2022b), the Project does not cross any active mineral operations. An active catlinite quarry is within the Monument, south of the Project (USGS 2011), and is a permitted location for indigenous peoples to continue to quarry catlinite (NPS 2017). Due to the distance from the active mining area, the Project is not anticipated to affect currently quarried and future quarried pipestone should quarry expansions occur in the Pipestone National Monument.

Based on review of a geologic map showing the extent and north-south orientation of known and inferred catlinite veins (NPS 2017; refer to Geologic Map Poster) that likely extend outside of the Pipestone National Monument boundary, the Project may cross previously unmapped veins of catlinite between approximate MPs 1.1 and 1.2. Magellan intends to advance a series of geotechnical borings to prepare for the HDD, and in doing so may better understand the subsurface extent of catlinite veins located outside of the Pipestone National Monument. Magellan plans to use the HDD method to avoid any catlinite layers that may be present at or near the ground surface within the Project area.

6.8.1.3 Paleontology

Due to the geologic history of the Project area and prehistoric erosion caused by glaciers, no known paleontological resources are in the Project area. There has been debate over the existence of fossils in the catlinite horizons within the Sioux Quartzite; however, the remnants were argued to be inorganic (Darby 1972). As such, it is unlikely that the Project would encounter paleontological resources.

6.8.2 Construction Impacts and Mitigation

6.8.2.1 Bedrock and Surface Geology

No unique geological features that have received state or federal protection will be disturbed by the Project. Project construction will result in minor, temporary impacts on topography and geology. Primary impacts will consist of temporary alteration of slopes in the construction workspaces due to grading and trenching operations. These disturbances will be necessary to create a level and safe construction area.

After the pipe is installed, Magellan will backfill the trench with native material and return surface contours to preconstruction conditions. In some cases, surface geology can affect how a pipeline is installed. As the majority of the route will not intersect shallow bedrock, and the Sioux Quartzite outcrop and shallow bedrock will be crossed using the HDD method, Magellan does not anticipate that blasting will be required.

After the trench is backfilled, Magellan will stabilize the ROW with erosion control measures as necessary (e.g., installation of slope breakers, temporary sediment barriers, and permanent trench breakers, as well as the revegetation and mulching of the construction workspace). Refer to Section 3.0 of Magellan's BMP Plan (Appendix C) for additional information on erosion control measures.

6.8.3 Operations Impacts and Mitigation

6.8.3.1 Bedrock and Surface Geology

Operational impacts to bedrock or surface geology will be limited to temporary impacts associated with maintenance activities that require excavation. If such excavations are required, they will be in areas previously affected by pipeline construction. Moreover, these areas will be restored when the excavations are complete. There is minimal risk of earthquake-related impacts on the pipeline during operations due to the limited potential for large, seismically induced ground movements. As such, no additional mitigation beyond designing the pipeline to currently accepted industry specifications is required to operate the pipeline.

6.9 Soils

6.9.1 Existing Environment

6.9.1.1 General Soil Composition

The Project will cross Land Resource Region M: Central Grains and Livestock Region. Within this region, the Project is entirely contained within Major Land Resource Area (MLRA) 102A: Minnesota and South Dakota Rolling Hill Prairie. This MLRA is characterized by rolling to flat topography with depressions and undefined drainages. The dominant soil order is Mollisols with a frigid temperature regime and mixed mineralogy. These soils are generally very deep and relatively fertile with silty loam and clayey textures (USDA NRCS 2022).

6.9.1.2 Soil Characteristics and Assessments

Magellan digitized and overlaid the Preferred Route onto SSURGO[1] database (Soil Survey Staff 2022) data to identify soil mapping units within the Project construction workspace. Soil map units crossed by the Preferred Route are described in Table 6.9-1 and shown on Figure 6.9-1. Based on the soil map units crossed by the Preferred Route, Magellan identified soil characteristics that could affect or be affected by Project construction. These characteristics include highly erodible soils, prime farmland, hydric soils, compaction-prone soils, presence of stones and shallow bedrock, and soils with revegetation limitations.

Table 6.9-2 provides a summary of significant soil characteristics identified along the Preferred Route according to the SSURGO database. Individual soil characteristics are discussed separately in the following sections.

[1] Soil Survey Geographic database

Table 6.9-1: Soil Map Units Crossed by the Preferred Route

Soil Map Unit Symbol	Soil Map Unit Name	Component Name(s)	Component Percent	Surface Texture	Drainage Class	Permeability
J2A	La Prairie loam, 0 to 2 percent slopes, occasionally flooded	La Prairie	100%	Loam	Moderately well drained	Moderate
J69A	Athelwold silty clay loam, 0 to 2 percent slopes	Athelwold	100%	Silty Clay Loam	Moderately well drained	Moderate
J71A	Brookings silty clay loam, 0 to 2 percent slopes	Brookings	100%	Silty Clay Loam	Moderately well drained	Moderately Slow
J72B	Renshaw-Sandberg complex, 2 to 6 percent slopes	Renshaw	83%	Loam	Somewhat excessively drained	Moderate
		Sandberg	17%	Sandy Loam	Excessively drained	Very Rapid
J74A	Estelline silt loam, coteau, 0 to 2 percent slopes	Estelline	100%	Silt Loam	Well drained	Moderate
J74B	Estelline silt loam, coteau, 2 to 6 percent slopes	Estelline	100%	Silt Loam	Well drained	Moderate
J80A	Lamoure-La Prairie complex, channeled, 0 to 2 percent slopes, frequently flooded	La Prairie	44%	Loam	Moderately well drained	Moderate
		Lamoure	56%	Silty Clay Loam	Poorly drained	Moderate
J82C	Rock outcrop-Ihlen complex, 6 to 12 percent slopes	Ihlen	47%	Silty Clay Loam	Well drained	Moderate
J85A	Trosky silty clay loam, 0 to 2 percent slopes	Trosky	100%	Silty Clay Loam	Poorly drained	Moderate
J90B	Kranzburg-Brookings silty clay loams, 1 to 6 percent slopes	Brookings	22%	Silty Clay Loam	Moderately well drained	Moderately Slow
		Kranzburg	78%	Silty Clay Loam	Well drained	Moderately Slow
J93A	Hidewood-Badger complex, 0 to 2 percent slopes	Badger	38%	Silty Clay Loam	Somewhat poorly drained	Moderately Slow
		Hidewood	63%	Silty Clay Loam	Poorly drained	Moderate
P17A	Ihlen silty clay loam, 0 to 2 percent slopes	Ihlen	100%	Silty Clay Loam	Well drained	Moderate
P18B	Ihlen-Rock outcrop complex, 0 to 6 percent slopes	Ihlen	68%	Silty Clay Loam	Well drained	Moderate

Source: Soil Survey Staff 2023

Table 6.9-2: Soil Characteristic Within the Project Area [a]

Facility	Total Acres	Prime Farmland [b]	Farmland of Statewide Importance	Hydric Soils [b]	Compact Prone [c]	Highly Erodible		Revegetation Concern [f]	Rocky [g]	Shallow Bedrock [h]
						Water [d]	Wind [e]			
Permanent Right of Way										
	5.6	4.4	0.0	0.7	0.6	0.5	0.0	0.2	2.1	0.8
Temporary Right of Way										
	2.6	2.6	0.0	0.2	0.3	0.0	0.0	0.0	0.5	0.0
Additional Temporary Workspace										
	5.2	4.7	0.0	0.1	0.1	0.4	0.0	0.2	1.9	0.8
Pipe Yard										
	1.9	0.7	0.0	0.0	0.0	1.0	0.0	0.0	0.7	0.0
Permanent Access Roads										
Access Road 6	1.4	0.9	0.0	0.5	0.3	<0.1	0.0	<0.1	0.4	0.0
Temporary Access Roads										
Access Road 1	0.4	0.4	0.0	0.1	< 0.1	0.0	0.0	0.0	0.1	0.0
Access Road 2	< 0.1	0.0	0.0	< 0.1	< 0.1	0.0	0.0	0.0	0.0	0.0
Access Road 3	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Access Road 4	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0
Access Road 5	< 0.1	< 0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grand Total	**17.9**	**14.4**	**0.0**	**1.6**	**1.5**	**1.9**	**0.0**	**0.4**	**6.1**	**1.7**

Source: Soil Survey Staff 2023

[a] *The numbers in this table have been rounded for presentation purposes; as a result, the totals may not reflect the sum of the addends. The values in each row do not add up to the total acreage because soils may occur in more than one characteristic class or may not occur in any class listed in the table.*

[b] *As designated by the Natural Resources Conservation Service. Prime farmland includes those soils that are considered prime if a limiting factor is mitigated (e.g., through artificial drainage).*

[c] *Soils in somewhat poor to very poor drainage classes with surface textures of sandy clay loam and finer.*

[d] *Soils in land capability subclasses 4e through 8e and soils with an average slope greater than 8 percent.*

[e] *Soils with a wind erodibility group classification of 1 or 2.*

[f] Soils with a surface texture of sandy loam or coarser that are moderately well to excessively drained, and soils with an average slope greater than 8 percent.

[g] Soils with one or more horizons that have a cobbley, stony, bouldery, channery, flaggy, very gravelly, or extremely gravelly modifier to the textural class and/or contain greater than 5 percent by weight rocks larger than 3 inches.

[h] Soils identified as containing bedrock within 60 inches of the soil surface.

6.9.2 Construction Impacts and Mitigation

The Preferred Route crosses approximately 14.4 acres (approximately 80 percent) of soils classified as prime farmland (see Table 6.9-2). The majority of the Preferred Route is currently in use as agricultural or pastureland. Impacts on prime farmland will be temporary. Section 3 of Magellan's BMP Plan (Appendix C) details the soil conservation measures that will be used.

To minimize topsoil disturbance and topsoil/subsoil mixing associated with construction, Magellan will remove and segregate topsoil in hay fields, pasture, residential areas, and other areas as requested by the landowner. The maximum depth of topsoil stripping will be 12 inches. If less-than-specified maximum depths of topsoil are present, the topsoil will be segregated to the depth that is present. The segregated topsoil and subsoil will be stockpiled separately and replaced in the proper order during backfilling and final grading of the construction workspace. Implementation of proper topsoil segregation will aid in successful post-construction revegetation and minimize the potential for long-term impacts on the soil.

The Preferred Route crosses approximately 1.5 acres (approximately 8 percent) of soils that are prone to compaction and approximately 1.6 acres (approximately 9 percent) of soils that are rated as hydric (see Table 6.9-2). Magellan will minimize compaction and rutting impacts by temporarily suspending certain construction activities on susceptible soils during wet conditions and constructing from timber mats or using low-ground-weight equipment where warranted (e.g., in saturated wetland soils). See Section 3 of Magellan's BMP Plan (Appendix C) for additional information on impact minimization techniques on soils in wet conditions.

The Preferred Route crosses approximately 1.9 acres (approximately 11 percent) of soils prone to water erosion. Magellan will implement erosion control measures to minimize erosion both during and after construction activities as necessary. These measures may include construction of silt fences, installation of slope breakers, temporary sediment barriers, permanent trench breakers, revegetation, and mulching of the construction workspace. Erosion and sediment controls will be inspected and maintained as necessary until final stabilization is achieved. Magellan will also implement dust mitigation measures, including the use of water trucks to moisten the construction ROW, as needed, to reduce impacts from wind erosion. See Section 3 of Magellan's BMP Plan (Appendix C) for additional information on erosion and sediment control techniques.

The Preferred Route crosses approximately 6.1 acres (approximately 34 percent) of rocky soils and approximately 1.7 acres (approximately 9 percent) of soils underlain by shallow bedrock (see Table 6.9-2). See Section 6.8, Geology, for additional information on surface geology and construction techniques.

6.9.3 Operations Impacts and Mitigation

Operations impacts on soils will be limited to sporadic and temporary disturbance during maintenance activities in discrete locations. If excavation is required during maintenance activities, soils will be restored to pre-maintenance conditions as soon as is reasonable following completion of the maintenance work. Mowing activities performed during maintenance activities have a very low potential to compact soils due to the small size of the equipment and minimal number of passes across a given area. During operations, there is a potential for soil contamination if equipment spills and/or leaks fuel, lubricant, or coolant. Magellan's implementation of the practices outlined in Section 4 of Magellan's BMP Plan (Appendix C) will help avoid or minimize this risk and any other operational impacts on soils.

6.10 Vegetation

This section describes the vegetation resources that could be affected by the Project. It includes descriptions of the various plant communities likely to be found in the area, along with descriptions of any unique or sensitive vegetation.

6.10.1 Existing Environment

The Project occurs in the Northern Glaciated Plains Level III Ecoregion of the United States (USEPA 2013). Ecoregions are areas that have similar environmental resources and characteristics, including geology, physiography, vegetation, climate, soils, land use, wildlife, and hydrology (USEPA 2022). Classification at the ecoregion level describes the broad-scale environmental factors that contribute to the dominant natural vegetation in the ecoregion. The Northern Glaciated Plains are characterized by subhumid conditions that support a transitional grassland between a tall and shortgrass prairie (USEPA 2013). Under Minnesota's Ecological Classification System (ECS), the ecoregion corresponds to the North Central Glaciated Plains Ecological Section of the Prairie Parkland Province (MNDNR 2022a). Ecological sections under the ECS are defined by the origin of the glacial deposits found in the area, regional elevation and climate, and plant distribution.

Acreages for vegetation communities were estimated by reviewing aerial photographs, ECS resources, the National Land Cover Database (USGS 2019), and the USFWS NWI. Based on this assessment, the Project area crosses about 6.19 acres of hay/pasture/herbaceous vegetation, about 0.95 acre of wetland, and about 0.07 acre of forest. About 8.92 acres of agricultural land and 1.74 acres of developed land are crossed by the Project. Wetlands are discussed in more detail in Section 6.15, Wetlands.

The Minnesota Biological Survey (MBS) systematically collects plant and animal distribution data and the ecology of native plant communities and functional landscapes across the state (MNDNR 2022b). The MBS assigns a biodiversity significance ranking to each site they survey within a specific geographic region (MNDNR 2022c). The MBS uses four classifications to rank sites, including outstanding, high, moderate, and below. Based on MBS data (2020), the Pipestone Creek NWR, located south and east of the Project area, was assigned an outstanding ranking, which indicates that the site contains rare native plants or an intact native ecosystem. While Pipestone Creek NWR is not contiguous with the Project area (121st Street creates a manmade border between the NWR and the Project), it is possible that vegetation located north of 121st Street is similar to that which is found within the NWR itself. However, outside the NWR and the portion of the Project area immediately north of 121st Street, plant species will likely differ from those within the NWR because the surrounding area is largely agricultural.

The Minnesota DNR defines a native plant community as a "group of native plants that interact with each other and with their environment in ways not greatly altered by modern human activity or by introduced organisms" (MNDNR 2022d). A native plant community may serve several ecological functions, such as soil enrichment and native habitat for plant and animal species. One native plant community, the Crystalline Bedrock Outcrop Prairie (Sioux Quartzite Subtype), is presumed to be located within the Project area based on a review of ECS and MBS resources and is described below. Native plant communities are shown on Figure 6.10-1 in Appendix K, Nonpublic Document.

Minnesota's ECS identifies four sublevels of ecological communities within an ECS Ecological Section (MNDNR 2022a). One of these is land type, which is distinguished by specific native plant community associations that would have historically occurred in the area (MNDNR 2022a). The Project will cross about 0.73 acre of the Crystalline Bedrock Outcrop Prairie (Sioux Quartzite Subtype). Soils in the Project area include a prairie loam and silty clay loam (NRCS 2022).

Representative vegetation in the Crystalline Bedrock Outcrop Prairie (Sioux Quartzite Subtype) is sparse, with dry lichen-dominated plant communities found on areas of exposed bedrock (MNDNR 2022e).

Herbaceous plant cover is sparse to patchy at about 5 to 50 percent cover. Tree and shrub overstory is absent to sparse at about 0 to 25 percent cover. Representative herbaceous cover may include small-flowered fameflower (*Talinum parviflorum*), brittle prickly pear (*Opuntia fragilis*), rock spikemoss (*Selaginella rupestris*), rusty woodsia (*Woodsia ilvensis*), false pennyroyal (*Isanthus brachiatus*), slender knotweed (*Polygonum tenue*), greenflowered peppergrass (*Lepidium densiflorum*), mock pennyroyal (*Hedeoma hispida*), western ragweed (*Ambrosia psilostachya*), bluets (*Hedyotis longifolia*), hairy panic grass (*Panicum lanuginosum*), and bracted spiderwort (*Tradescantia bracteata*) in areas of shallow soil. In deeper soil, representative species may include prairie species such as blue grama (*Bouteloua gracilis*), little bluestem (*Schizachyrium scoparium*), big bluestem (*Andropogon gerardii*), Indian grass (*Sorghastrum nutans*), prairie dropseed (*Sporobolus heterolepis*), harebell (*Campanula rotundifolia*), arrow-leaved violet (*Viola sagittata*), blood milkwort (*Polygala sanguinea*), round-headed bush clover (*Lespedeza capitata*), and prairie wild onion (*Allium stellatum*). Tree and shrub vegetation, while limited, can include sand cherry (*Prunus pumila*) and blackberries (*Rubus* spp.). Open-grown oak trees, especially bur oak, are often present on bedrock outcrop complexes.

6.10.2 Construction Impacts and Mitigation

Impacts on vegetation resources will include temporary ground disturbance to complete construction activities. Vegetation (including stumps and roots) will be removed; however, where required, vegetation will only be cut off at ground level (leaving root system intact). Approximately 7.20 acres of vegetated habitat (e.g., hay/pasture/herbaceous land, forest land, and wetlands) will be temporarily disturbed during Project construction. Upon construction completion, workspace temporarily disturbed during construction will be returned to their preconstruction contours to the extent practicable. Temporary erosion control measures implemented during construction, and where appropriate, permanent erosion controls installed after construction will be used to minimize erosion and improve revegetation. Disturbed areas designated for revegetation will be seeded with a temporary mix and/or allowed to return to a permanent vegetated state naturally without temporary seeding.

About 10 acres (62 percent) of available habitat, including the Crystalline Bedrock Outcrop Prairie and emergent wetland vegetation adjacent to Pipestone Creek, will be avoided via HDD; there will be no surface disturbance between the workspaces associated with the entry and exit points of the HDD. Trenching will not occur during construction where the Project crosses native plant communities, and therefore impacts on sensitive plant communities from these activities are not anticipated. As a result, impacts on native plant communities are expected to be minimal.

Access roads were routed to use existing two-track roads, public roads, and residential driveways, and to avoid undisturbed vegetation to the extent possible (e.g., use of agricultural fields). Five of the six access roads for the Project will be temporary and will be restored to pre-existing conditions. All disturbed areas will be seeded with an approved seed mix representative of surrounding vegetation and existing plant communities.

6.10.3 Operations Impacts and Mitigation

No permanent aboveground facilities are associated with the proposed Project that would cause permanent impacts on vegetation. One permanent access road for the Project was routed to use existing roads and driveways and areas without sensitive vegetation (e.g., pasture). About 1.38 acres will be impacted by AR-6; 0.66 acre of hay/pasture/herbaceous land, 0.58 acre of agricultural land, 0.12 acre of wetland, and 0.03 acre of developed land would be affected during use of the road itself. The access road will not be graveled and will only be used periodically for maintenance activities; therefore, impacts as a result of road use are anticipated to be short-term and temporary. Since the pipeline will be buried, operation impacts will be limited to maintenance activities that could entail temporary vehicle disturbance or excavation of small segments of pipe.

6.11 Wildlife

6.11.1 Existing Environment

The Project area occurs in the Northern Glaciated Plains Level III Ecoregion of the United States and is characterized by transitional grassland between a tall and shortgrass prairie (USEPA 2013). Under Minnesota's ECS, the Project area is within the Inner Coteau Subsection of the North Central Glaciated Plains (MNDNR 2022a). The Inner Coteau Subsection contains some exceptional areas of remaining native tallgrass prairie, interspersed with wetlands and streams that support a variety of birds, mammals, fish, amphibians, reptiles, and invertebrates (MNDNR 2022a). The following general wildlife species identified in Table 6.11-1 represent those that may occur within or near the Project area.

Table 6.11-1: General Wildlife Species Potentially Occurring Within the Project Area

General Wildlife	Potentially Occurring Species
Birds	American Goldfinch, Bobolink, Brown-headed Cowbird, American Robin, Common Yellow Throat, Dickcissel, Red-winged Blackbird, Ring-necked Pheasant, Song Sparrow, Burrowing Owl, Northern Harrier, Western Meadow Lark
Mammals	Virginia opossum, masked shrew, big brown bat, common raccoon, red fox, coyote, thirteen-lined ground squirrel, groundhog, North American beaver, striped skunk, white-footed mouse, eastern cottontail, white-tailed deer
Fish	Topeka shiner, common shiner, common carp, creek chub, central stoneroller, blacknose dace, green sunfish, orange-spotted sunfish, bluegill, black crappie, white sucker, plains topminnow, northern pike, brook stickleback, black bullhead, stonecat
Reptiles/ Amphibians	American toad, boreal chorus frog, tiger salamander, northern leopard frog, common snapping turtle, western painted turtle, western plains garter snake, northern prairie skink
Invertebrates	Common eastern bumble bee, monarch butterfly, dark paper wasp, six-spotted tiger beetle, common green darner, differential grasshopper, virile crayfish, calico crayfish

Sources: NPS 2019; National Audubon Society Undated

6.11.1.1 Avian

This section identifies representative bird species that may occur near the Project area. Based upon a review of available information from the NPS on Pipestone National Monument located south of the Project area, over 100 species of birds have been documented in the area (NPS 2019). The majority of species likely to occur within the Project area are representative of a prairie habitat and can be categorized as ground nesting birds, such as the Brown-headed Cowbird (*Molothrus ater*), Western Meadow Lark (*Sturnella neglecta*), Ring-necked Pheasant (*Phasianus colchicus*), and Bobolink (*Dolichonyx oryzivorus*) (National Audubon Society Undated). However, additional bird species such as the American Goldfinch (*Spinus tristis*) and Red-winged Blackbird (*Agelaius phoeniceus*) may be found within 1 mile of the Project area, as small, wooded areas appear to be nearby based on a review of aerial photography.

Migratory Bird Treaty Act of 1918

The Migratory Bird Treaty Act (MBTA) is a strict liability statute that imposes penalties for taking any migratory bird or any part, nest, or eggs of such a bird. The regulations define "take" under the MBTA as "to pursue, hunt, shoot, wound, kill, trap, capture or collect" or to attempt to do so (16 U.S.C. §§ 703 *et seq.*). Non-native birds are not covered by the MBTA. Section 3 of the MBTA requires federal agencies to promote migratory bird population conservation, which includes an analysis of the effects of actions on

migratory birds, emphasizing species of conservation concern. A review of the Information for Planning and Consultation (IPaC) database indicated that fifteen migratory birds of conservation concern have the potential to occur within the Project area (USFWS 2022a).

Important Bird Areas

The Project area is about 4.7 miles west and 3.9 miles southeast of portions of the Prairie Coteau Important Bird Area (IBA), which constitutes a major bird migration corridor used for fall and spring migrations (National Audubon Undated). This IBA supports assemblages of species that represent high-quality, rare habitat types such as native prairie (National Audubon Undated). Typical habitat found within the IBA includes mesic and wet prairie (National Audubon Undated), which are found within the Project area (MNDNR 2022a). The Prairie Coteau IBA provides habitat for a number of species of conservation concern including Henslow's Sparrow (*Centronyx henslowii*), Burrowing Owl (*Athene cunicularia*) and Chestnut-collared Longspur (*Calcarius ornatus*) [state endangered]; Horned Grebe (*Podiceps auritus*), Wilson's Phalarope (*Phalaropus tricolor*) and Loggerhead Shrike (*Lanius ludovicianus*) [state threatened]; and Marbled Godwit (*Limosa fedoa*), Franklin's Gull (*Leucophaeus pipixcan*), Forster's Tern (*Sterna forsteri*), Short-eared Owl (*Asio flammeus*), and Nelson's Sparrow (*Ammospiza nelson*) [state species of special concern] (National Audubon Undated; MNDNR 2022b).

6.11.1.2 Mammals

Based upon review of available information from the NPS, over 25 species of mammals have been documented in the area (NPS 2019). The majority of species likely to occur within the Project area are representative of a prairie habitat and can be categorized as small mammals, such as the white-footed mouse (*Peromyscus leucopus*), eastern cottontail (*Sylvilagus floridanus*), masked shrew (*Sorex cinereus*), and thirteen-lined ground squirrel (*Ictidomys tridecemlineatus*) (NPS 2019). Large mammals may also occur, including white-tailed deer (*Odocoileus viginianus*), red fox (*Vulpes vulpes*), and the common raccoon (*Procyon lotor*).

6.11.1.3 Amphibians and Reptiles

Only a few species of amphibians and reptiles have been documented in the area (NPS 2019). Reptile species occurring within the Project area are likely to be found within both Pipestone Creek and tallgrass prairie. Representative turtle species likely to occur within Pipestone Creek include the common snapping turtle (*Chelydra serpentine*) and the western painted turtle (*Chrysemys picta*), while representative snake and lizard species likely to occur in the tall grass prairie include the western plains garter snake (*Thamnophis radix*) and the northern prairie skink (*Eumeces spetentrionalis*) (NPS 2019). Amphibian species occurring within the Project area are likely to be found near the emergent wetlands within the tallgrass prairie habitat of the area. Representative amphibian species likely to occur within the Project area include the American toad (*Bufo americanus*), tiger salamander (*Ambystoma tigrinum*), northern leopard frog (*Lithobates pipiens*), and the boreal chorus frog (*Pseudacris maculate*) (NPS 2019).

6.11.1.4 Invertebrates

Based upon a review of available information from the NPS on Pipestone National Monument, thousands of insects have been documented within the Monument’s boundaries, while only two species of crayfish (*Faxonius* sp.) have been observed to occur within the region (NPS 2019). Insect species occurring within the Project area are likely to be representative of tallgrass prairie habitat and include the common eastern bumble bee (*Bombus impatiens*), differential grasshopper (*Melanoplus differentialis*), and the common green darner (*Anax junius*) (NPS 2019). Additionally, representative crayfish species within the Project area are likely to occur within Pipestone Creek and include the virile crayfish (*Faxonius virilis*) and the calico crayfish (*Faxonius immunis*) (NPS 2019).

6.11.2 Construction Impacts and Mitigation

Impacts on nesting birds would not be anticipated as construction is scheduled to commence in the third quarter of 2024, which is outside of the nesting bird season. If construction commences in the second quarter of 2024, during nesting season (April–August), preconstruction nest survey will occur 14 days before vegetation clearing begins to identify active nests. Much of the Project length will be installed via the HDD method, minimizing disturbance to wildlife habitat, and another portion of the Project will occur across active row-crop agricultural fields; however, construction activities could harm or temporarily displace wildlife, disrupt normal activities, and increase stress. Wildlife sensitivity to elevated noise, light, and activity varies by species and individuals. The HDD method will be used to minimize impacts to the most significant wildlife habitat within the riparian zone along Pipestone Creek as well as wetlands associated with one of the two intermittent tributaries to Pipestone Creek crossed by the Project. It is anticipated that most wildlife within the Project's construction footprint will move to nearby suitable habitat when construction commences. Nearly half of the Project area is already perennially disturbed by agriculture, which is unlikely to provide quality habitat. Much of the Project route will be installed using the HDD method and will avoid habitat impacts. Once the Project workspace is restored, wildlife will be able to use the Project workspace in a similar manner as before construction.

6.11.3 Operations Impacts and Mitigation

Operation of the Project would only result in intermittent and infrequent disturbance to wildlife during operations activities. If maintenance of the pipeline is necessary, short-term impacts to discrete locations may be necessary over the lifetime of the pipeline. However, these incidents would be localized and infrequent, and wildlife would be expected to be temporarily displaced and will return to the habitat after any maintenance activities occur.

6.12 Fisheries

6.12.1 Existing Environment

The Project crosses Pipestone Creek and is located near Indian Lake (an impoundment of Pipestone Creek), which is southeast of the Project area. Pipestone Creek is a tributary of the Big Sioux River in Pipestone County, Minnesota, and Moody County, South Dakota. Pipestone Creek is approximately 53.2 miles long (USGS 2022). Land use in the Pipestone Creek watershed is primarily agriculture and animal production, with pastureland dominating the riparian areas. Due to the lack of game fish and the relatively small size of the stream, recreational use of Pipestone Creek is minimal (MPCA 2008). Mapped palustrine emergent wetlands (PEM) are in the riparian area surrounding Pipestone Creek. These wetlands may provide fish habitat.

Twenty-six species of fish have been documented within the waters of Pipestone Creek (NPS 2019), including the Topeka shiner (*Notropis topeka)*, which is discussed further in Section 6.13.1.3. The majority of species likely to occur within the Project area are representative of a tallgrass prairie perennial stream habitat and includes the common shiner (*Luxilus cornutus*), creek chub (*Semotilus atromaculatus*), blacknose dace (*Rhinichthys atratulus*), and black crappie (*Pomoxis nigromaculatus*).

Under Section 303(d) of the Clean Water Act (CWA), states are required to assess all waters of the state to determine if they meet water quality standards, to list waters that do not meet standards and update the list biannually, and to conduct total maximum daily load (TMDL) studies to set pollutant-reduction goals needed to restore waters to the extent that they meet water quality standards for designated uses. The MPCA is the agency that assesses all waters of the state and creates a list of impaired waters (e.g., those that fail to meet water quality standards) every 2 years. The Project crosses Pipestone Creek,

which the MPCA lists as impaired for aquatic life (benthic macroinvertebrates bioassessments and fish bioassessments) (MPCA 2022).

There is not currently an established TMDL for Pipestone Creek; however, efforts are underway to establish a TMDL with a target completion date of 2025 (MPCA 2008).

6.12.2 Construction Impacts and Mitigation

Excavation, trenching, or dredging will not occur in perennial water resources; therefore, impacts on fishery resources from these activities are not anticipated. The construction activity that may impact Pipestone Creek is the HDD installation of the pipeline below Pipestone Creek. The Project has developed an HDD Inadvertent Return Mitigation Plan (Appendix E) that outlines the procedures that will be followed to minimize the potential for an inadvertent release of drilling fluid. Drilling fluid is a non-toxic mixture of water and bentonite clay. Should drilling fluid be released into Pipestone Creek, it could displace or smother aquatic organisms and habitat. The HDD Inadvertent Return Mitigation Plan identifies measures for both identifying a release and undertaking effective cleanup should a release occur. Therefore, in the event of an inadvertent release, the effects on fish populations and habitats are expected to be minor, localized, and short-term.

It is anticipated that water for the drilling fluid used during the HDD process will be obtained from a local municipal source. After HDD completion, containment and disposal of the drilling fluid will be performed in accordance with applicable permit requirements. The recovered drilling fluid may be recycled, spread on farmlands, or disposed of at an approved upland location or an approved disposal facility. Water discharged over land will be directed through containment structures such as straw bale structures and/or filter bags and placed in a well-vegetated upland area.

During and following construction, Magellan will implement compliance monitoring to verify that the temporary surface water and wetland impacts associated with construction of the pipeline facilities are appropriately addressed through adherence to applicable permit conditions and implementation of the protective measures in Project-specific plans. Therefore, should an inadvertent return occur, impacts from HDD crossings will be temporary, localized, and minor by implementing the mitigation measures outlined above.

6.12.2.1 Water Withdrawal and Discharge

Magellan will comply with all permit conditions and requirements for water withdrawals and discharges associated with trench dewatering and hydrostatic testing (if water is not tanked and hauled offsite). No water withdrawal activities are anticipated; water for hydrostatic testing will be obtained from municipal sources and transported by truck to the Project. Water discharge will be consistent with Section 7 of Magellan's BMP Plan (Appendix C) and applicable permits, which will minimize impacts on aquatic resources.

Potential impacts on fisheries resources associated with water discharges could include short-term increased sedimentation and localized erosion or scour of the channel bed and banks or adjacent upland habitat. To minimize these impacts, the Project will regulate the discharge rate and use energy dissipation and other erosion control devices, as necessary to prevent erosion, streambed scour, and suspension of sediment. In addition, hydrostatic test water will be discharged, monitored, and reported in accordance with all federal and state rules, regulations, and permits. With the implementation of the BMP Plan, impacts on aquatic resources from hydrostatic testing of the pipeline will be temporary, localized, and minor.

6.12.3 Operations Impacts and Mitigation

Following construction, the applicant anticipates no permanent impacts on fisheries in the Project area. The Project area will be returned to preconstruction conditions, and during operation of the pipeline, impacts on waterbodies and associated fisheries crossed by the Project are not anticipated. Since the pipeline will be buried, and installation across the perennial waterbodies crossed by the Project will be via the HDD method, operations impacts will generally be limited to infrequent maintenance activities that could entail temporary vehicle disturbance or excavation of small segments of pipe that are generally not associated with the deeper HDD installation segments. Any material released into Pipestone Creek is likely to be temporary and localized, and permanent impacts on fisheries resources are not anticipated.

6.13 Threatened, Endangered, and Sensitive Species

This section describes protected species and habitat that may occur in the Project area. This includes federally listed or proposed species and designated or proposed critical habitat protected under the federal Endangered Species Act (ESA) of 1973, as well as state-listed species protected by Minnesota state statute. State species of greatest conservation concern are also discussed.

6.13.1 Federally Listed Species

Section 9 of the ESA prohibits the take of endangered fish and wildlife species, where take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct, as defined in Section 3 of the ESA. Section 4(d) of the ESA establishes protective regulations for threatened species, promulgated as a 4(d) rule, while Section 9 of the ESA prohibits the removal, possession, damage, or destruction of endangered plant species from areas under federal jurisdiction. The USFWS, which is responsible for terrestrial and freshwater species, has jurisdiction over federally listed species and DCH in Minnesota.

Based on a review of the USFWS IPaC database, the five species listed in Table 6.13-1 could be present in or near the Project area (USFWS 2022a; Appendix H, IPaC Report). Pipestone Creek is DCH for the federally endangered Topeka shiner (*Notropis topeka*). The Minnesota DNR Rare Species Guide also identified three species listed in Table 6.13-1 as occurring in Pipestone County (MNDNR 2022a). Species descriptions are provided below.

Table 6.13-1: Federally Listed Species and Designated Critical Habitat Potentially Occurring Near the Project Area

Common Name	Scientific Name	Federal Status [a]	Designated Critical Habitat Present? (Y/N)	Suitable Habitat Present? (Y/N)
Mammals				
Northern long-eared bat	*Myotis septentrionalis*	E	N	N
Tricolored bat	*Perimyotis subflavis*	PE	N	Y
Fish				
Topeka shiner [b]	*Notropis topeka*	E	Y	Y
Insects				
Dakota skipper [b]	*Hesperia dacotae*	T	N	N

Common Name	Scientific Name	Federal Status [a]	Designated Critical Habitat Present? (Y/N)	Suitable Habitat Present? (Y/N)
Plants				
Western prairie fringed orchid [b]	*Platanthera praeclara*	T	N	N

Sources: USFWS 2022a; Federal Register 2022

E = endangered; N = no; PE = proposed endangered; T = threatened; Y = yes

[a] *All species are also state-listed; see Section 6.13.2 for a discussion of state-listed species.*

[b] *Species noted by MNDNR to occur in Pipestone County*

6.13.1.1 Northern Long-eared Bat

Existing Environment

The northern long-eared bat (NLEB) is federally listed as endangered and state-listed as special concern.

In January 2020, the USFWS was ordered to re-review the listing status of the NLEB. On March 22, 2022, the USFWS published an updated Species Status Assessment of the NLEB (USFWS 2022b). The assessment process evaluated data from states, tribes, researchers, and other organizations; considered species' needs; evaluated threats; and projected species' future abundance and distribution. On March 23, 2022, the proposed rule to reclassify the NLEB as endangered under the ESA was published in the Federal Register. Comments on the proposal were accepted through May 23, 2022. The USFWS coordinated internally and reviewed all comments received during the comment period.

The final rule to reclassify the NLEB as endangered under the ESA will take effect on March 31, 2023 (Federal Register 2022). There is no DCH for the NLEB. Major threats to the NLEB include the loss and degradation of summer habitat due to construction and development, and white-nose syndrome, a fungal disease that spreads rapidly throughout bat colonies.

The NLEB predominantly overwinters in large caves and abandoned mines with stable temperatures and high humidity. During the summer, the species roosts underneath bark, in cavities, and in crevices of live and dead trees that either retain their bark or provide suitable cavities or crevices. Roosting habitat occurs in woodlands and forests at least 10 acres in size, including trees within 1,000 feet of woodland and forest habitat (USFWS 2020). Foraging habitat includes wooded riparian corridors that connect to suitable roosting habitat within 1.5 miles (USFWS 2020) and significant water resources (i.e., streams and ponds) within about 325 feet of foraging and/or roosting habitat.

Construction and Operations Impacts

The NLEB is known or believed to occur or have occurred in Pipestone County based on federal data (USFWS 2022c). However, according to the Minnesota DNR and USFWS documented NLEB maternity roost trees and/or hibernacula entrances in Minnesota (MNDNR/USFWS 2021), there are no known maternity roost trees and/or hibernacula in Pipestone County, and the NLEB is not mapped as occurring in Pipestone County by the Minnesota DNR (MNDNR/USFWS 2021). In addition, no suitable woodland or forest habitat is within 1,000 feet of the Project area. Minimal tree clearing during construction is anticipated only where trees occur in ATWS and are directly over the pipeline. The NLEB is not expected to occur within the Project area; therefore, construction and operations impacts on the species are not anticipated.

6.13.1.2 Tricolored Bat

Existing Environment

The tricolored bat (TCB) is proposed for listing as endangered under the ESA, and state-listed as special concern. As a proposed listed species, the TCB is not currently protected by the take restrictions of section 9 of the ESA; however, federal agencies must confer with the USFWS if their action will jeopardize the continued existence of a proposed species.

The USFWS hosted a virtual public informational meeting on October 12, 2022, in which the USFWS gave an outline of species status and listing timeline. This meeting was recorded and will be posted online at https://www.fws.gov/species/tricolored-bat-perimyotis-subflavus when available. During this meeting, the USFWS noted their intention to finalize the listing in the fall 2023.

The TCB roosts in deciduous trees within forested habitats during the warmer months; however, maternity colonies have not yet been located in Minnesota. The bat hibernates from October into April in caves, mines, and tunnels (MNDNR 2022a). As with the NLEB, the TCB's main threat is white-nose syndrome.

Construction and Operations Impacts

There are no known occurrences of the TCB or known hibernacula within Pipestone County, based on 2022 Natural Heritage Information System (NHIS) data (MNDNR 2022). In addition, no suitable woodland or forest habitat is within 1,000 feet of the Project area. Minimal tree clearing during construction is anticipated only where trees occur in ATWS and are directly over the pipeline. The TCB is not expected to occur within the Project area; therefore, construction and operations impacts on the species are not anticipated.

6.13.1.3 Topeka Shiner

Existing Environment

The Topeka shiner is both federally and state-listed as endangered, and DCH has been designated for the species (as described below). The Topeka shiner is a small minnow that lives in small to mid-size prairie streams in the central United States where it is usually found in pool and run areas. Suitable streams tend to have good water quality and cool-to-moderate temperatures. The streams are generally slow-moving and naturally winding, with bottoms made of sand, gravel, or rubble often covered by a deep layer of silt. Topeka shiners prefer pool-like areas outside the main channel courses that are in contact with groundwater and usually contain areas of vegetation and exposed gravel.

The USFWS designated 836 miles of stream in Iowa, Minnesota, and Nebraska as DCH for the species, including 21 stream segments totaling 196 miles of stream in Pipestone County (USFWS 2004). This critical habitat designates areas that contain habitat essential for the conservation of the species. Topeka shiner DCH includes the portion of Pipestone Creek within the Project area (USFWS 2004). There have been multiple documented occurrences of this species within 1 mile of the Project crossing area based on 2022 NHIS data (MNDNR 2022d). The most recent occurrence was in 2018.

Construction and Operations Impacts

Topeka shiner DCH within the Project area (e.g., Pipestone Creek) will be crossed via HDD, as discussed in Sections 6.12.2 and 6.12.3. If the crossing is successful, then the Project will have no impact on the species or its habitat. If an inadvertent return should occur, then a release of drilling fluid into shiner habitat may occur. The applicant will implement its HDD Inadvertent Return Plan (Appendix E) to minimize impacts on Pipestone Creek and the Topeka shiner, in the unlikely event that an inadvertent

return would occur within the waters of the creek. The HDD Inadvertent Return Plan includes measures for both identifying an inadvertent return and undertaking effective cleanup should an inadvertent return occur. Therefore, in the event of an inadvertent return, the effects on fish populations and habitats are expected to be minor, localized, and short-term. The Project will implement the BMP Plan (Appendix C) to prevent impacts on the species as a result of construction-related dewatering (e.g., trench dewatering, hydrostatic test water discharge). Operations impacts would be similar to those discussed in Section 6.12.3.

6.13.1.4 Dakota Skipper

Existing Environment

The Dakota skipper is listed both federally and state-listed as threatened. There is no DCH for the species. The Dakota skipper is a northern prairie endemic species whose historical range has been lost through conversion of favorable habitat to agriculture. The Dakota skipper is dependent on the survival of its upland prairie habitat. The species prefers native dry-mesic to dry prairie, where mid-height grasses such as bluestem, prairie dropseed, and side-oats grama are a major component of the vegetation.

There has been one historical documented occurrence of this species within the Project area based on 2022 NHIS data (MNDNR 2022d). This occurrence was in July of 1968. Favorable habitat for this species is not located within the Project area; however, habitat is present within Pipestone Creek NWR.

Construction and Operations Impacts

About 2.45 acres of undisturbed grassland is mapped by the MNDNR within the Project ROW; however, a review of recent aerial imagery indicates that this area is routinely grazed by cattle and is unlikely to provide the requisite habitat for the Dakota Skipper. This area will be impacted during Project construction by the temporary removal of vegetation and grading of the Project ROW. After construction, the area will be restored to pre-existing contours, and allowed to revegetate.

Construction is anticipated to commence as early as the second quarter (spring/summer) of 2024, and last for approximately 3 months. This timing coincides with the flight period of the species (approximately mid-June through the end of July) (USFWS 2018). As such, it is expected that the species, if present, will be able to move away from the construction area during vegetation clearing, and utilize adjacent undisturbed habitat. Nectar availability may be reduced during construction; however, it is anticipated that there are abundant nectar sources adjacent to the Project workspace which may be utilized. Vegetation removal within the Project ROW and access roads is unlikely to impact the species.

6.13.1.5 Western Prairie Fringed Orchid

The western prairie fringed orchid is both federally and state-listed as threatened. There is no DCH for the species. The species has up to 24 white to creamy-white flowers, each with a long nectar spur. The lower petal of each flower is deeply three-lobed and fringed. The species occurs almost exclusively in remnant plant communities in areas of full sunlight on moist calcareous till or sandy soil.

There has been one documented occurrence of this species within 1 mile of the Project area based on 2022 NHIS data (MNDNR 2022d). This occurrence was in 2017. The Project workspace is comprised of active agricultural fields grassland, grazed pasture, a small amount of forested upland, and PEM wetland surrounding Pipestone Creek. Documented soil types in the Project area are primarily silty and loamy soils (NRCS 2021). Based on the current landcover and soil types, favorable habitat for this species is not likely to occur within the Project area.

6.13.2 State-Listed Species

Minn. Stat. § 84.0895 and Minn. R. 6134.0100–6134.0400 and 6212.1800–6212.2300 establish protections for state-designated threatened and endangered plant and animal species. These protections include prohibitions on take except for plants in previously disturbed ground in certain agricultural lands, in ditches, and in existing public road ROWs (Minn. Stat. § 84.0895 subd. 2(1)). Take can be permitted through the Minnesota DNR if the social and economic benefits of the activity outweigh the harm (Minn. Stat. § 84.0895 subd. 7(a)(4)). Accidental take of an endangered plant is not a violation of the statute when the existence of the plant is not known at the time of taking (Minn. Stat. § 84.0895 subd. 2(d)). Surveys for threatened and endangered species are not required per Minn. R. 6134.0150.

ERM reviewed the Minnesota DNR NHIS under License Agreement LA-1051 (MNDNR 2022d). Ten state-designated threatened or endangered species were identified with documented occurrences within 1 mile of the Project area (see Table 6.13-2). The species and habitat descriptions provided below were gathered from the Minnesota DNR Rare Species Guide (MNDNR 2022a). The DNR provided early coordination comments on the Project in October 2022. Magellan will continue to coordinate with the DNR to avoid and minimize potential impacts to state-listed species as a result of Project construction, operation and maintenance.

Table 6.13-2: State-Listed Species Documented Within 1 Mile of the Project Area

Common Name	Scientific Name	State Status	Suitable Habitat in the Project Area (Y/N)
Birds			
Henslow's sparrow	*Ammodramus henslowii*	E	Y
Fish			
Topeka shiner [a]	*Notropis topeka*	E	Y
Invertebrates			
Dakota skipper [a]	*Hesperia dacotae*	E	N
Plants			
Short-pointed umbrella sedge	*Cyperus acuminatus*	T	N
Larger water starwort	*Callitriche heterophylla*	T	Y
Prairie quilwort	*Isoetes melanopoda*	E	Y
Hairy waterclover	*Marsilea vestita*	E	Y
Western prairie fringed orchid [a]	*Platanthera praeclara*	E	N
Waterhyssop	*Bacopa rotundifolia*	T	Y
Mud plantain	*Heteranthera limosa*	T	Y

Source: Minnesota DNR NHIS Database (MNDNR 2022d)

NA = Not applicable; E = endangered, T = threatened

[a] Species are also federally listed; see Section 6.13.1 for a discussion of these species.

6.13.2.1 Existing Environment

Henslow's Sparrow

The Henslow's Sparrow is state-listed as endangered. The NatureServe state conservation status for this species is S1 (critically imperiled), while the national conservation status is N1 (critically imperiled). Breeding habitat includes uncultivated grasslands and old fields with stalks for singing perches and a substantial organic litter layer. Litter depth, vegetation height, and the number of standing, dead herbaceous stems are important components of occupied areas. While the species breeds in Minnesota, Pipestone County is outside the documented breeding range.

There have been two documented occurrences of this species within 1 mile of the Project area based on 2022 NHIS data (MNDNR 2022d). The most recent occurrence was in 2013. Favorable habitat for this species is located within the Project area.

Topeka Shiner

See the discussion for this species in Section 6.13.1.3.

Dakota Skipper

See the discussion for this species in Section 6.13.1.4.

Short-Pointed Umbrella Sedge

The short-pointed umbrella sedge is state-listed as threatened. The NatureServe state conservation status for this species is S2 (imperiled), while the national conservation status is N5 (secure). The short-pointed umbrella sedge occurs widely in the United States, with about a dozen populations confirmed extant in Minnesota. The species occurs at the edge of shallow rock pools and in the muddy margins of ponds and lakes. Plants are typically rooted in a sparsely vegetated ephemeral area with a thin layer of organic material.

There has been one documented occurrence of this species within 1 mile of the Project area based on 2022 NHIS data (MNDNR 2022d). This occurrence was in 2015. Favorable habitat for this species is located within the Project area.

Larger Water Starwort

The larger water starwort is state-listed as threatened. The NatureServe state conservation status for this species is S2 (imperiled), while the national conservation status is N5 (secure). The larger water starwort is a small aquatic plant with two distinct ranges and habitats in Minnesota. This species occurs in shallow rainwater pools on outcrops of igneous or metamorphic rocks, primarily Sioux quartzite.

There has been one documented occurrence of this species within 1 mile of the Project area based on 2022 NHIS data (MNDNR 2022d). This occurrence was in September 1961. Favorable habitat for this species is located within the Project area, including Sioux quartzite outcrops.

Prairie Quillwort

The prairie quillwort is state-listed as endangered. The NatureServe state conservation status for this species is S1 (critically imperiled), while the national conservation status is uncertain but estimated to be N5 (secure). The species is a deciduous plant with linear quill-like, bright green leaves that become pale to black toward the base. This species is restricted to prairie regions of Minnesota where Sioux quartzite

is exposed at the surface, and are usually rooted in shallow fine-textured sediments. The species occurs in the areas discussed above where soil pockets or pools exist.

There has been one documented occurrence of this species within 1 mile of the Project area. This occurrence was in 2011. Favorable habitat for this species occurs within the Project area, including Sioux quartzite outcrops.

Hairy Waterclover

The hairy waterclover is state-listed as endangered. The NatureServe state conservation status for this species is S1 (critically imperiled), while the national conservation status is uncertain but estimated to be N5 (secure). The hairy waterclover is a semi-aquatic plant that prefers moist soil at the margins of shallow prairie pools, and ephemeral rainwater pools on rock outcrops. Favorable habitat is sparsely vegetated and receives direct sunlight, with seasonal fluctuation of water levels appearing to be an essential habitat requirement.

There has been one documented occurrence of this species within 1 mile of the Project area. This occurrence was in 2018. Favorable habitat for this species is located within the Project area, including rock outcrops (NRCS 2021; NPS 2017).

Western Prairie Fringed Orchid

See the discussion for this species in Section 6.13.1.5.

Waterhyssop

The waterhyssop is state-listed as threatened. The NatureServe state conservation status for this species is S2 (imperiled), while the species is not ranked federally. The waterhyssop is a small aquatic plant with roundish opposite leaves. The flowers of this plant are white or bluish-white and develop on short recurved pedicels in the axils of the leaves. The species occurs in small rainwater pools on bedrock outcrops and occasionally along the margins of shallow prairie ponds.

There has been one documented occurrence of this species within 1 mile of the Project area. This observance was in 1963. Favorable habitat for this species is located within the Project area, including bedrock outcrops (NRCS 2021; NPS 2017).

Mud Plantain

The mud plantain is state-listed as threatened. The NatureServe state conservation status for this species is S2 (imperiled), while the global conservation status for this species is G5 (secure). The mud plantain is a small aquatic plant with ephemeral, often blue, flowers. The three stamens are dimorphic, which the larger central stamen being purple or white, with a longer filament and oblong anther. The species occurs in pools of aquatic prairie habitats associated with outcrops of Sioux quartzite.

There has been one documented occurrence of this species within 1 mile of the Project area. This observance was in 1956. Favorable habitat for this species is located within the Project area, including Sioux quartzite outcrops.

6.13.2.2 Construction Impacts and Mitigation

Henslow's Sparrow is not likely to be impacted by construction. The Project area is outside the breeding range of Henslow’s Sparrow and the species has not been documented within 1 mile of the Project area in 10 years. Furthermore, construction is scheduled to commence outside of the nesting bird season, the HDD method will be used to minimize aboveground disturbance, and much of the Project area does not

provide suitable habitat for Henslow's Sparrow. If Henslow's Sparrow does occur in the area during construction, activities could potentially harm or temporarily displace the bird and increase stress, though it is anticipated that any individuals would move away from the disturbances while they are occurring.

Construction impacts on the Topeka shiner and Dakota skipper, which are both federally listed species, are unlikely.

Construction impacts on protected plant species are unlikely but possible, as temporary ground disturbance will be required to complete construction activities. Trenching will not occur during construction where the Project crosses native plant communities (e.g., the Sioux quartzite outrcrop will be avoided by HDD), and therefore impacts on sensitive plant communities from these activities are not anticipated. As a result, impacts on native plant communities are expected to be minimal. Upon construction completion, disturbed workspace will be returned to preconstruction contours to the extent practicable. Erosion controls will also be installed during and after construction to minimize erosion and improve revegetation. Disturbed areas designated for revegetation will be seeded with a temporary mix and/or allowed to return to a permanent vegetated state naturally without temporary seeding.

6.13.2.3 Operations Impacts and Mitigation

Operation of the Project would include temporary and infrequent disturbances for maintenance. These impacts would be highly localized and short-term. Wildlife, including state-listed species, in the area would be expected to be temporarily displaced and would return to the habitat after any maintenance activities occur. As described in Section 6.13.2.1, Henslow's Sparrow is not likely to be impacted by these activities. Furthermore, the potential impacts due to operations would be even less likely than the construction impacts due to the infrequent and temporary nature of any maintenance activities.

Operations impacts on the Topeka shiner or its habitat and to the Dakota skipper are not anticipated.

No permanent impacts are anticipated on state-listed plants, as no permanent aboveground facilities are planned. Operational impacts will be limited to maintenance activities that could entail temporary vehicle disturbance or excavation of small pipe segments.

6.13.3 Bald and Golden Eagles

6.13.3.1 Bald and Golden Eagle Protection Act

The Bald Eagle was officially removed from the federal threatened and endangered species list in 2007 but is still protected, along with the Golden Eagle, under the federal Bald and Golden Eagle Protection Act (BGEPA), as well as the MBTA. The BGEPA protects Bald and Golden Eagles by prohibiting anyone without a permit issued by the Secretary of the Interior from "taking" a Bald or Golden Eagle, including their parts, nests, or eggs (16 U.S.C. § 668−668c). Major threats to these species include habitat alteration, human disturbance, and environmental contaminants (particularly organochlorine pesticides and lead). Furthermore, Bald and Golden Eagles are vulnerable to disturbance during courtship, nest building, egg laying, incubation, and brooding. Disturbance during these periods may lead to nest abandonment, cracked and chilled eggs, and exposure of small young to the elements.

Bald Eagles typically nest in large trees and live near rivers, lakes, and marshes where they can find fish, their primary food. In winter, Bald Eagles tend to congregate near open water in tall trees for spotting prey and night roosts for sheltering (USFWS 2022e).

6.13.3.2 Existing Environment

Southwestern Minnesota is only known to support nonbreeding populations of Bald Eagles (The Cornell Lab 2022). Based on a review of aerial imagery, the lack of large trees and waterbodies indicates Bald Eagles are not likely to occur in the area.

Golden Eagles do not nest in Minnesota, but may pass through during their migration (MNDNR 2022b). Nonbreeding populations of Golden Eagles are recognized as scarce in southwestern Minnesota and are not likely to be present in the vicinity of the Project (The Cornell Lab 2022).

6.13.3.3 Construction and Operations Impacts and Mitigation

Bald and Golden Eagles are not likely to occur in the Project area and any eagles near the area are likely to be nonbreeding, as the region is not known to support breeding eagle populations (The Cornell Lab 2022). Furthermore, the lack of large trees and large waterbodies near the Project makes it unlikely for Bald or Golden Eagles to occur in the area during Project construction and operation.

6.14 Groundwater Resources

6.14.1 Existing Environment

The bedrock composition across the Project area is made up of Precambrian Sioux Quartzite bedrock, consisting of quartzite (hard medium- to coarse-grained quartz sandstone and small amounts [less than 5 percent] of hardened mudstone, siltstone, and fine-grained sandstone) and catlinite (mudstone made up of mainly clay minerals) (Graham 2017). Based upon a review of available Minnesota Department of Health well logs in the area, shallow groundwater is estimated to be approximately 13 to 25 feet below ground (MDH 2021).

6.14.1.1 Aquifers

Aquifers are geologic units containing or transmitting groundwater, typically composed of thick, laterally continuous deposits of permeable sand, gravel, or bedrock (permeable sandstone or limestone, or highly fractured bedrock). The Sioux Quartzite Aquifer, a crystalline-rock aquifer of the Proterozoic age, underlies the majority of Pipestone County. Although more than 500 feet thick in some areas, the upper 200 to 300 feet contain loose sand zones with joints and fractures, enabling it to serve as an aquifer that provides drinking water for the county via four wells ranging from 390 to 700 feet deep (Pipestone County 2021; MDH 2018). The Sioux Quartzite Aquifer is near the ground surface in the vicinity of the Project with finished wells in the vicinity of the Project ranging generally from 16 to 40 feet in depth, although the closest well to the Project is 170 feet deep (MDH 2021). As a result of the relatively shallow aquifer, it has a high vulnerability to contamination in areas where it outcrops, such as within the study area, or where glacial drift overlay is thin. Aquifer recharge is mainly through infiltration and precipitation through overlying drift and Cretaceous sedimentary rock joints and fractures and areas overlain by permeable sediments.

6.14.1.2 Sole Source Aquifers

Under the Safe Drinking Water Act, the USEPA is authorized to designate aquifers that provide at least 50 percent of the drinking water to an area and if contaminated would create a significant public health hazard (USEPA 2022a). The USEPA sole-source aquifer database was reviewed and there are no USEPA-designated sole-source aquifers within the study area (USEPA Undated).

6.14.1.3 Wells

A review of the Minnesota Well Index (MDH 2021) and the USGS National Water Information System Mapper (USGS 2020) indicates 16 wells near the pipeline as listed in Table 6.14-1 and shown on Figure 6.14-1 in Appendix A, Figures. The Minnesota Department of Health Administrative Rule 4725.4450 states that water supply wells must be greater than 100 feet from a pipeline. Of the wells identified, the Church of St. Leo's Cemetery (Unique Well ID 00579698) is the closest to the Project and is approximately 250 feet east of the pipeline centerline. The remaining 15 wells are located on the east side of Indian Lake and Pipestone Creek, greater than 2,500 feet from the Project.

Table 6.14-1: Minnesota Well Index Wells near the Project Area

Unique Well ID	Well Name	Depth (feet)
579698	Church of St. Leo's	170
874909	City of Pipestone	55
212870	Pipestone National Monument	51
226956	Northern Mine Area 80-1	40
226957	Northern Mine Area 80-2	35
226958	Northern Mine Area 80-3	40
226960	Northern Mine Area 80-5	32
226961	Northern Mine Area 80-6	41
226962	Northern Mine Area 80-7	30
226963	Northern Mine Area 80-8	40
235713	Test Hole 1	35
235712	Test Hole 5	50
235715	Test Hole 4	60
235714	Test Hole 2	35
496873	MW-B3	16

6.14.1.4 Wellhead Protection Areas

Wellhead protection areas are areas that contribute groundwater to a public water supply and are susceptible to contamination through land or surface water (USEPA 2022b). The state of Minnesota's Wellhead Protection Program requirements and regulations are outlined under Minn. R. 4720.5100 to 5590 and are overseen by the Minnesota Department of Health.

The Pipestone Wellhead Protection Area is located southeast of the Project. Wellhead protection areas are outlined by clear boundaries as Drinking Water Supply Management Areas (DWSMAs) and given vulnerability rankings from very low to very high based on the likelihood that contamination would reach the public water supply intake associated with it. The Pipestone DWSMA is ranked as very high. Figure 6.14-1 in Appendix A, Figures, depicts Wellhead Protection Areas within 1 mile of the Project.

6.14.1.5 Contaminated Groundwater

There are no known groundwater contamination remediation sites in Pipestone County according to the MPCA Groundwater Contamination Atlas (MPCA Undated).

6.14.2 Construction Impacts and Mitigation

Construction of the Project is not expected to have long-term impacts on groundwater resources. Construction activities, such as trenching, backfilling, and dewatering, that encounter shallow surficial groundwater may result in minor short-term and localized fluctuations or short-term increases in turbidity within shallow groundwater adjacent to the Project workspace. Ground disturbance typically associated with pipeline construction for conventional trench installation of the pipeline is limited to surface and shallow ground layers of about 5.5 feet. Other specialized construction methods such as the HDD or bore methods may require more localized ground disturbance that exceeds this depth for entry and exit holes for these specialized techniques, and the HDD itself will exceed this depth in the confined hole created by this method. However, ground disturbance is expected to be temporary, and only minor impacts to groundwater are anticipated.

Construction dewatering may temporarily affect shallow groundwater levels near the dewatering location. In addition, any applicable water appropriations and use permits required under federal or state law would be obtained prior to using groundwater resources. Once the construction activity is complete, groundwater levels are expected to recover quickly to preconstruction levels.

As discussed in Section 6.14.1, the Minnesota Well Index shows one water well within 250 feet of the proposed workspace. The distance to this well will be confirmed prior to construction to ensure that it is farther than 100 feet to the operational pipeline ROW.

Groundwater could be impacted by a spill of hazardous material such as fuel or lubricants associated with construction equipment, which is of particular concern due to the proximity to the Pipestone Wellhead Protection Area (see Figure 6.14-1). The introduction of contaminants into groundwater due to accidental release of construction-related chemicals, fuels, or hydraulic fluid during construction could negatively affect groundwater quality. Spill-related impacts from pipeline construction are primarily associated with fuel storage, equipment refueling, and equipment maintenance. Spill prevention and response measures implemented to prevent accidental releases of fuels and other hazardous substances are outlined in the BMP Plan (Appendix C).

Earth disturbance of 1 acre or more requires a construction stormwater permit issued by the MPCA and the development of a Stormwater Pollution Prevention Plan (SWPPP). A SWPPP will be prepared that will identify potential pollutant discharges associated with the proposed construction and describe prevention techniques to minimize the risk of non-point source pollution and sedimentation, as well as spill response plans.

The use of the HDD construction method includes the potential for inadvertent returns of drilling fluid and release of drilling fluid into groundwater resources. The drilling fluid used for an HDD is composed of water, non-toxic bentonite, and other inert additives; therefore, HDD crossings are not expected to affect groundwater quality. Long-term water quality will not be affected by pipeline construction or subsequent operations as the pipe's exterior will be free of chemicals when installed. While spills and inadvertent returns of drilling mud are not expected during construction, implementing the protective measures set forth in the HDD Inadvertent Return Plan (Appendix E) and the BMP Plan (Appendix C) will further mitigate risks to contamination of groundwater, should a spill or inadvertent return occur during construction activities.

6.14.3 Operations Impacts and Mitigation

Operation and maintenance of the pipeline are not expected to affect groundwater resources. During operations activities, it is possible that fuel spills from maintenance trucks and equipment could occur. Spill minimization and mitigation will follow operational spill response plans and routine equipment maintenance procedures. If a spill occurs, it would be cleaned up and reported according to required

regulations. If pipeline maintenance requires excavation, similar short-term impacts may occur in a similar but more localized area than what is anticipated for the initial construction impacts. Although there is potential for dewatering of shallow groundwater aquifers and potential changes in groundwater quality (such as increases in total suspended solids concentrations) during trenching, excavation, and backfilling maintenance activities, these changes are expected to be temporary. Shallow groundwater aquifers generally recharge quickly because they are receptive to recharge from precipitation and surface water flow.

6.15 Wetlands

6.15.1 Existing Environment

Impacts on surface waters (wetlands and waterbodies) in the Project area may be regulated federally under Sections 401 and 404 of the Clean Water Act and by the state under the Wetland Conservation Act (WCA). Surface disturbance greater than 1 acre would also be regulated under Section 402 through the National Pollutant Discharge Elimination System (NPDES). In Minnesota, Section 404 permits are administered by the U.S. Army Corps of Engineers St. Paul Regulatory District, Section 401 Water Quality Certifications and Section 402 general stormwater permits are administered by the MPCA, and the WCA is regulated by the applicable local government unit with oversight by the Minnesota Board of Water and Soil Resources. Wetland impacts associated with utilities, including pipelines and associated facilities are exempt from WCA wetland replacement requirements if certain specifications are met as outlined in Minnesota statutes and rules (BWSR 2019).

6.15.1.1 Watershed

The Project is within the Missouri River Basin in Minnesota, which is made up of four major watersheds: the Upper Big Sioux River, Lower Big Sioux River, Rock River, and Little Sioux River. These watersheds are headwaters of the Big and Little Sioux Rivers that drain approximately 1,783 square miles of southwestern Minnesota and eventually reach the Missouri River (MPCA 2014). The Project is within the Lower Big Sioux River major watershed and is split into the smaller hydrologic unit code 12 (HUC 12) watersheds (see Figure 6.15-1 in Appendix A). The majority of the Project area is within the Upper Pipestone Creek HUC 12 (101702031303). The Upper Pipestone Creek HUC 12 drains approximately 45 square miles of surface waters into Pipestone Creek, which runs through the Project area. Surface water in this HUC 12 drain into the South Branch Pipestone Creek, south of the Project.

6.15.1.2 Wetlands

The USFWS NWI indicates that the Project area contains PEM, palustrine forested (PFO), palustrine unconsolidated bottom (PUB), and riverine (RVR) wetlands adjacent to the north and south sides of Pipestone Creek (USFWS 2011). Wetlands are classified using the Cowardin System (Cowardin 1979). PEM wetlands are characterized by erect, rooted, herbaceous hydrophytes (i.e., aquatic plants), excluding mosses and lichens, PFO wetlands are characterized by woody vegetation that is at least 20 feet tall, PUB wetlands are characterized as open water with an area of less than 20 acres, and RVR wetlands are characterized by wetlands contained within a channel. The proposed Project crosses approximately 0.57 acre of PEM, 0.06 acre of PFO, 0.07 acre of PUB, and 0.26 acre of RVR type wetlands associated with Pipestone Creek and its tributaries, as outlined in Table 6.15-1 (see Figure 6.15-1 in Appendix A).

Table 6.15-1: Wetlands Crossed

Wetland	Permanent ROW	Temporary ROW	ATWS	Pipe Yard	AR-1	AR-2	AR-3	AR-4	AR-5	AR-6	Total
	(acres)										
PEM	0.48	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.57
PSS	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
PUB	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.04	0.07
RVR	0.15	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.26
Total a	0.70	0.11	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.12	0.95

AR = Access Road; ATWS = additional temporary workspace; PEM = palustrine emergent; PUB = palustrine unconsolidated bottom; ROW = right-of-way; RVR = riverine

[a] Addends may not sum to total due to rounding.

6.15.1.3 Field Survey

A field-based wetland delineation will be completed in spring 2023 to verify the presence and extent of aquatic resources, and the resulting report and any necessary permitting materials will be submitted to applicable agencies.

6.15.2 Construction Impacts and Mitigation

As discussed in Section 6.15-1, Existing Environment, approximately 0.95 acre of wetlands will be crossed by the Project, the majority of which are anticipated to be crossed via HDD. Direct impacts on wetlands associated with construction would be limited to open-cut trenching and temporary matting placement required for staging materials or machinery.

As shown on Figure 6.15-1 (Appendix A), an RVR-type wetland is mapped through the agricultural field on the south side of 116th Street and through an open field on the north side of 116th Street, of which approximately 0.09 acre would be crossed via open-cut trenching and 0.10 acre would be within temporary workspace. A small segment of farmed PEM wetland is also mapped within the temporary workspace on the south side of 116th Street.

AR-1 is an existing unpaved road that crosses 0.01 acre of mapped PUB wetland using multiple existing culverts. AR-2 appears to be an existing unpaved, grassy two-track road. A 0.01-acre section of PUB wetland is mapped by the NWI as located within AR-2; however, the actual extent and location of the wetland will be identified during a field delineation, and wetlands will be avoided. AR-6 is an existing grassy two-track farm road that crosses approximately 0.12 acre of wetlands. This access is intended for up to biannual maintenance checks and would not be used during construction. No improvements are planned for any access roads that will be used for the Project.

The remaining wetlands crossed by the Project workspace would be crossed by HDD with construction impacts limited to the potential placement of temporary timber matting where wetlands cannot support construction equipment. Typical construction schematics illustrating wetland crossings are provided in Appendix A.

6.15.2.1 Trenching

Construction via open-cut trenching in wetlands will be similar to construction in uplands and will consist of clearing vegetation and preparing the workspace, which will include installing erosion controls, trenching, dewatering where necessary, installing the pipeline, backfilling, cleaning up, and revegetating.

Temporary construction impacts may result in short-term loss of vegetation and wildlife habitat associated with trenching, matting, and equipment traffic. Construction workspace will neck down to 75 feet through wetlands. Wetlands would be restored to preconstruction contours and allowed to revegetate, with no long-term impacts anticipated.

The wetlands crossed via open-cut trenching are within agricultural and pastureland/open field; therefore, little to no woody vegetation is anticipated within the wetlands that would be impacted via open-cut trenching. Vegetation will be cut off at the ground level, leaving the existing root systems intact to preserve natural sources of rootstock and to facilitate revegetation of the native wetland species after construction, except within the immediate pipeline trench footprint. If present, stumps will only be removed over the trench line and where necessary for safe equipment operation. Trees, shrubs, and stumps that are removed will be disposed of outside wetlands.

Typically, the pipeline trench will be excavated in wetlands using a backhoe excavator. In unsaturated wetlands, up to 12 inches of topsoil will be stripped from the trench line and stockpiled separately from trench spoil. If the soils in the wetland are stable and capable of supporting equipment with or without timber construction mats, the pipe will be strung, welded, and lowered into the trench using conventional upland crossing methods. When water is present in the trench, the trench may be temporarily dewatered.

After the pipe has been installed, the trench will be backfilled and the original contours of the wetlands will be restored. In areas where the topsoil has been segregated, the topsoil will be redistributed on top of the subsoil that has been placed in the trench as backfill to facilitate the natural revegetation process. Any excess backfill material will be removed to an upland area.

6.15.2.2 *Cleanup and Revegetation*

Cleanup and rough grading of wetlands will begin as soon as practical after the trench is backfilled and topsoil is restored. The goal of cleanup and rough grading is to restore wetland hydrology and soils and avoid permanent impacts. Wetlands will be restored to preconstruction elevations and timber mats and any temporary soil placed in the wetland will be removed. Disturbed wetland areas will then be revegetated according to applicable permit requirements and landowner input. No fertilizer, lime, or mulch will be applied in wetlands.

6.15.3 Operations Impacts and Mitigation

After the pipeline is installed, the ROW will be maintained to be free of larger-diameter trees that could have deep roots that may compromise the pipeline. Because the ROW contains no PFO or palustrine scrub-shrub (PSS) wetlands, no permanent conversion of wetland types will occur, and no permanent wetland impacts are anticipated. AR-6, which would be used up to twice a year for maintenance access, may require the use of temporary timber mats to cross wetlands depending on field conditions at the time of access. Temporary impacts on wetlands may also result from maintenance activities that require excavation. Temporary wetland impacts associated with maintenance would be permitted separately when necessary.

6.16 Waterbodies

6.16.1 Existing Environment

Surface waters in the Project area drain into Pipestone Creek, which runs through Indian Lake on the southeast side of 121st Street north and westward. A review of the USGS National Hydrography Dataset (NHD) data indicates that the Project area contains the perennial Pipestone Creek (USGS ID 130984923), Indian Lake (USGS ID 130994126), multiple small, unnamed waterbodies, and multiple unnamed intermittent tributaries to Pipestone Creek (see Figure 6.16-1 in Appendix A). NHD waterbodies

crossed by the Project are listed in Table 6.16-1. The Project would be constructed beneath Pipestone Creek and one of the two intermittent tributaries to Pipestone Creek via the HDD method. Unnamed intermittent tributary (130971648) would be crossed in two locations via the open-cut method, while the remaining intermittent tributary (130961050) would be crossed via AR-6 only during operations.

Table 6.16-1: Waterbodies Crossed

Waterbody (USGS ID)	Permanent ROW (feet)	Temporary ROW (feet)	AR-1 (feet)	AR-6 (feet)
Unnamed Intermittent Stream (130961031)	32	0	16	0
Pipestone Creek (130984923)	32	0	0	0
Unnamed Intermittent Stream [a] (130971648)	203	215	0	0
Unnamed Intermittent Stream [b] (130961050)	0	0	0	15

AR = Access Road; ID = identification; ROW = right-of-way; USGS = United States Geological Survey

[a] Crossed in two locations

[b] Crossed by AR-6; only during operations as a maintenance road

Pipestone Creek is classified as a Public Water by the Minnesota DNR and is regulated under Minn. Stat. § 84.415. Utility Crossing Permits are required from the Minnesota DNR for any utility to cross over, under, or across any state land or public water and will be acquired prior to beginning construction.

6.16.1.1 *Floodplain*

Based on a review of the Federal Emergency Management Agency (FEMA) online Flood Insurance Rate Maps (FIRM #270627-005B), the area surrounding Pipestone Creek is mapped as Zone A, areas of a 1 percent annual chance flood hazard (100-year flood). The remainder of the Project area is within Zone C, areas of minimal flooding (FEMA Undated). FEMA and the Minnesota DNR are updating floodplain zones in Pipestone County by using current LiDAR per correspondence with Pipestone County (Pipestone County, pers. comm. 2022). Updated floodplain boundaries were provided by the county and are shown on Figure 6.16-1 in Appendix A. The proposed Project crosses approximately 2.26 acres of floodplain, as outlined in Table 6.16-2.

Table 6.16-2: Floodplain Acres Crossed

Floodplain Crossed	Permanent ROW	Temporary ROW	ATWS	Pipe Yard	AR-1	AR-2	AR-3	AR- 4	AR-5	AR- 6	Total
Acres	0.98	0.00	0.00	0.32	0.05	0.01	0.00	0.30	0.00	0.59	2.26

AR = Access Road; ATWS = additional temporary workspace; ROW = right-of-way

6.16.1.2 *Designated Outstanding Resource Value Waters*

The MPCA has designated specific aquatic resources within the state as Outstanding Resource Value Waters (Minn. R. 7050.0335). These waters are classified as “prohibited” and “restricted,” with additional regulatory protections due to high water quality or exceptional recreation, cultural, aesthetic, or scientific values. These waters require an individual 401 Water Quality Certification review by the state. No Outstanding Resource Value Waters are located within 5 miles of the Project area (MPCA 2022a).

6.16.1.3 *Impaired and Infested Waters*

States are required to inventory water quality standards and submit a list of impaired and threatened waters every 2 years to the USEPA, per Clean Water Act Section 303(d). The Minnesota 2022 Impaired Waters List was reviewed and Pipestone Creek. The designated use of aquatic life is impaired through all of Pipestone County, and there is not currently an established TMDL. The listed pollutant or stressors include benthic macroinvertebrate bioassessments and fish bioassessments. However, there is a TMDL target completion of 2025 (MPCA 2022b).

The Minnesota DNR maintains a list of waterbodies that contain invasive aquatic species that can spread to other waters. A review of the November 9, 2022, Infested Waters List indicates that no waters within the Project area contain known invasive aquatic species (MNDNR 2022).

6.16.1.4 Field Survey

A field-based wetland delineation and waterbody survey will be completed in spring 2023 to determine the presence and extent of aquatic resources; documents will be submitted to applicable agencies.

6.16.2 Construction Impacts and Mitigation

As described in Section 6.16-1, the Project crosses Pipestone Creek, its floodplain, and two unnamed, intermittent tributaries to Pipestone Creek.

The Project will cross Pipestone Creek, its floodplain, and an unnamed waterbody (USGS ID 130961031) within the permanent ROW via HDD, avoiding direct impacts on these waterbodies. A portion of the unnamed waterbody (USGS ID 130961031), also mapped by the NWI as RVR wetland, runs under AR-1; however, no improvements are planned for this access road and no impacts are anticipated on the aquatic resource. AR-6 crosses an unnamed intermittent stream (130961050) and would not be used during construction.

Approximately 2.26 acres of floodplain will be crossed, as shown in Table 6.16-2. A staging yard used for pipe staging and equipment will be located adjacent to 70th Avenue on an existing partially cleared lot. Approximately 0.32 acre of the pipe yard, 0.98 acre of permanent ROW, and 0.36 acre of access roads used during construction will cross through the Pipestone Creek floodplain. AR-6 crosses approximately 0.59 acre of floodplain, and will be used only during operations. While there may be some compaction due to machinery use in the yard and access roads, impacts are anticipated to be temporary and mitigated by timing construction to avoid the wet season.

The unnamed waterbody with USGS ID 130971648, also mapped by the NWI as RVR wetland and discussed in 6.15.2, runs through agricultural land and a pasture/open field on the south and north sides of 116th Street and would be crossed via open-cut trenching. In-stream trenching would be conducted during periods permitted by the appropriate regulatory agencies and applicable permits. Stream crossings would be designed as close to perpendicular to the axis of the stream channel as engineering and routing constraints allow, creating the shortest crossing length. It is possible based on aerial photography that this waterbody may be determined to be wetland and not a waterbody, pending the field wetland and waterbody delineations planned in spring 2023.

Direct impacts at the stream crossings would be limited to a trench approximately 34 inches wide and 66 inches deep (see Section 3, Project Description, and Section 4, Right-of-Way Preparation and Construction Sequence). Where waterbodies will be crossed via trenching, grading will be completed on each side of the waterbody prior to the trench crossing, as necessary, to establish a safe, level working area for construction personnel and equipment and to accommodate pipeline installation preparation activities such as pipe bending. Any necessary grading will be directed away from the waterbody to reduce the potential for material to enter the waterbody. Prior to grading, the appropriate soil erosion and

sediment control measures such as silt fence and/or staked straw bale structures will be installed for spoil containment and to minimize the potential for sediment to migrate into the waterbody. Once all erosion and sediment controls measures are in place and the installation of the pipeline is ready, only then will the trenching within the waterbody occur, to minimize the duration of impacts on the waterbody.

6.16.2.1 *Open-Cut Wet Trench Method*

After initial clearing and grading is complete, the pipeline is installed across the waterbody using the open-cut wet trench method. The open-cut wet trench method is a waterbody crossing technique that often minimizes total duration of in-stream disturbance and involves excavating the trench through the waterbody or ditch using draglines or backhoes operating from the stream banks. Typical construction schematics illustrating waterbody crossings are provided in Appendix C, BMP Plan.

6.16.2.2 Horizontal Directional Drill Method

The HDD method (described in Section 4.1.10) will be used to minimize ground disturbance to streams and the land surface between the entry and exit points of the crossing where wetlands or waterbodies are crossed by the HDD. If necessary, hand-clearing of vegetation will be conducted between the HDD entry and exit pits. Where the HDD crosses wetlands and waterbodies, the travel lanes will be limited to foot traffic. Minor vegetation removal may be required along with travel lanes, but will be limited to clearing with hand tools and the minimum required for safe foot travel. Use of the HDD method will eliminate any excavation along the stream banks. Typical construction schematics illustrating waterbody crossings are provided in Appendix C, BMP Plan.

6.16.2.3 Mitigation

Temporary, indirect impacts on water quality such as increased turbidity and localized sedimentation of stream bottoms could occur during construction from disturbed soils as a result of vegetation clearing, trenching, and other construction activities around and within the waterbody. These impacts would be mitigated or prevented through use of erosion control measures and BMPs, and minimization of the duration of impacts, as required by applicable permits.

During construction activities, stream banks will be protected from erosion by using temporary and permanent soil stabilization techniques. Examples of erosion control techniques include placement of erosion control blankets, mulch, straw bales, bio-logs, silt fence, and prompt seeding following construction activities. A temporary seed mix will be installed within a 50-foot buffer on either side of the waterbody, based on permit requirements and landowner input. While the pipe section crossing the waterbody is being tied in with the remainder of the pipeline, if trench dewatering is necessary during the tie-in process, the water will be pumped into a dewatering structure. The dewatering structure will include a filter bag and/or filtration structure, and will be located in a well-vegetated area and situated to prevent silt migration into waterbodies or wetlands.

During HDD, the possibility exists for drilling mud to reach the surface or encounter a void or fissure that causes a release to the ground surface. The drilling fluid is composed of water, non-toxic bentonite, and other inert additives; therefore, HDD crossings are not expected to affect surface water quality in the event of an inadvertent release of drilling fluid. While spills and inadvertent returns of drilling mud are not expected during construction, implementing the protective measures set forth in the HDD Inadvertent Return Plan (Appendix E) will further mitigate risks to contamination of surface water resources should an inadvertent return or spill occur during construction activities.

Use of the HDD method will avoid impacts on evident streams visible from desktop data. However, if upon field surveys a small waterbody is identified and impacts are required during construction, stream banks will be restored as close as practicable to preconstruction contours and revegetated with appropriate

vegetation. As necessary, erosion control blankets (e.g., curlex, jute, or equivalent) will be placed on slopes over 30 percent or that are a continuous slope to a sensitive resource area (e.g., wetland or waterbody) to encourage revegetation and slope stabilization adjacent to these sensitive areas. Appropriate permanent seed mixes will be installed after final grading to restore vegetation along the waterbody banks and adjacent uplands, using seed mixes compliant with permit requirements and landowner input. Placement of rock rip-rap, geotextile fabric, and other bioengineering techniques may be implemented to stabilize sites inherently unstable. If this is necessary, applicable permit requirements and conditions will be followed regarding volume of materials and installation requirements required by permits. The streambed will be restored, banks will be reconstructed and stabilized with temporary and permanent erosion control measures. Temporary erosion control measures will be reinstalled if they were removed during the pipe installation and will be maintained until permanent erosion control measures are installed and effective.

6.16.2.4 *Hydrostatic Testing*

The new pipeline section will be hydrostatically tested to verify its integrity prior to placing the pipeline in service. Applicable water appropriation and discharge permits for hydrostatic testing activities will be acquired. Hydrostatic test water will likely be acquired from a local municipal source.

Water used for hydrostatic testing will be discharged in uplands in accordance with NPDES permit requirements. Where water is discharged to an upland area, energy dissipation devices (e.g., straw bale structures) and controlled discharge rates will minimize the potential for erosion and subsequent release of sediment into nearby surface waters and wetlands. Although not anticipated, if hydrostatic test water is discharged directly into waterbodies, energy dissipation devices (e.g., splash pups) and controlled discharge rates will be used to prevent stream bottom scour. Test water additives are not anticipated, and no chemicals will be used to dry the pipeline following the hydrostatic testing.

All requirements of the individual NPDES hydrostatic test discharge permits issued for the Project will be met. The total volume of water discharged and the discharge rate will be verified with a flow meter (or equivalent), or as required by the individual NPDES permit, and will not exceed those specified in the individual NPDES permit.

If needed, the Minnesota DNR General Permit 1997-0005 for water appropriation will be acquired. Per guidance from the DNR, an appropriation site that will meet the DNR's criteria of "doing no harm" will be selected and reviewed by the DNR. The Minnesota DNR General Permit states that water withdrawals must have a minimal potential for impacts on groundwater resources and must not adversely impact trout streams, calcareous fens, or other significant environmental resources. Withdrawal from impaired waters is allowed if use of the water will not impact the impairment for which the waterbody is listed.

6.16.3 Operations Impacts and Mitigation

Operations and maintenance activities such as ROW vegetation clearing may have temporary, minor impacts on water quality as a result of disturbed soils, which will be restored and stabilized as soon as practical after completion. AR-6, which would be used up to twice a year for maintenance access, crosses an unnamed intermittent stream (130961050). A temporary mat bridge may be used to cross this waterbody. Temporary impacts on waterbodies may also result from maintenance activities that require excavation. Any temporary impacts on waterbodies would be permitted separately when necessary.

6.17 Cultural Resources

Minnesota state policy is to engage in formal government-to-government tribal consultation on projects that affect Minnesota tribes and their lands, as provided in Executive Order 19-24, *Affirming the*

Government-to-Government Relationship between the State of Minnesota and the Minnesota Tribal Nations; Providing for Consultation, Coordination, and Cooperation. The MPUC adopted the *Minnesota Public Utilities Commission Tribal Engagement/Consultation Policy* to guide meaningful engagement with tribes in the MPUC's regulatory process.

Under Minn. R. 7852.1900, subp. 3(C), the Commission must consider impacts on "lands of historical, archaeological, and cultural significance," which includes tribal resources on public lands and the protection of human remains and burials. The State Historic Preservation Office consults with applicants, as well as tribal, state, and federal government agencies, to identify historic properties and ways to avoid or reduce adverse effects on those properties, including tribal historic and cultural properties. Applicable laws include, but may not be limited to, Minn. Stat. §§ 138.31 to 138.42 and the Private Cemeteries Act (Minn. Stat. § 307.08).

6.17.1 Cultural Resource Surveys

For the purpose of this discussion, cultural resources include archaeological resources (e.g., sites and isolated finds), historic resources (e.g., objects, buildings, structures, or districts), and sacred places (including traditional cultural properties, as defined by the National Historic Preservation Act and related regulations). Cultural resources may also include tribal, usufructuary[2] rights to use resources within reservation boundaries and ceded lands by treaty (e.g., quarrying catlinite) and landscapes. Cultural resources are finite and non-renewable; once destroyed they, and the information they provide, are lost. State and federal laws and regulations provide standards for cultural resources identification, evaluation, and mitigation of impacts. Preconstruction avoidance, minimization, and mitigation measures for historic properties and tribally significant resources will be developed in coordination with interested tribes and the appropriate agencies (e.g., State Historic Preservation Office, Office of the State Archaeologist) after the field surveys are completed.

In November 2022, Magellan conducted a preliminary archaeological field reconnaissance to examine the local field conditions (e.g., presence of erosion, natural environmental features, areas of prior ground disturbance) to inform the scope of the Phase I archaeological fieldwork planned for Spring 2023. Magellan conducted preliminary subsurface sampling using the methods outlined in the *State Archaeologist's Manual for Archaeological Projects in Minnesota* (OSA 2011). Fourteen shovel tests were excavated at a 15-meter interval. No archaeological materials were identified in the shovel tests. Magellan will complete the archaeological survey in spring 2023 in coordination with interested tribal representatives (see Section 6.17.3, Tribal Resources and Coordination). The survey report will be submitted to the State Historic Preservation Office and filed to the Project docket when complete.

6.17.2 Unanticipated Discoveries

Magellan has developed a Plan for the Unanticipated Discovery of Cultural Resources and/or Human Remains (Appendix D) for use during all Project construction activities. This plan prescribes actions to be taken in the event that previously unrecorded archaeological or historic site or human remains are discovered during construction activities, which sets forth the guidelines to be used in the event archaeological resources (including both prehistoric and historical resources) or human skeletal remains are discovered during construction activities. If archaeological or cultural materials or suspected human skeletal remains are identified during ground-disturbing activities within the construction corridor, Magellan would work with applicable representatives and authorities to establish a mitigation strategy for pipeline construction and operation.

[2] Usufruct is the right to use and benefit from a property, while the ownership of which belongs to another person or entity (www.law.cornell.edu).

6.17.3 Cultural Resource Monitoring Plan

A Cultural Resource Monitoring Plan will be developed for implementation during the construction of the Project. The objective of the monitoring program is to establish roles, responsibilities, and protocols by which archaeological and tribal monitors participate in monitoring active Project construction. The monitors will assist Magellan in providing guidance in the event that cultural, archaeological resource sites, or human remains are identified during construction. This plan will be implemented in coordination with the procedures outlined in Magellan's Plan for the Unanticipated Discovery of Cultural Resources and/or Human Remains (Appendix D.)

6.17.4 Tribal Resources and Coordination

Magellan will complete an archaeological survey for the Project. However, the standard interpretation of the archaeological record usually does not recognize sites of cultural, religious, and historic significance to American Indian tribes. The Project is in an area that has been important to indigenous peoples for time immemorial. The water, plants, animals, and geologic formations in the Project area were widely used for a variety of cultural practices. During coordination meetings with Magellan, tribal representatives expressed a direct relationship between the environmental, spiritual, and cultural realms and their interconnection with contemporary life as well as concern about potential project impacts on tribally sensitive resources that extend beyond the Pipestone National Monument.

The following sections provide a summary of recent historic events in the Project area and a summary of Magellan's coordination with the tribes.

6.17.4.1 Treaties

The Project is located in an area occupied and used by many tribes since time immemorial. During the nineteenth century, the United States wanted to ensure that land was available for additional settlement. Two land cessation treaties with the United States were signed by the Upper Dakota Sioux and Yankton Sioux. The U.S. Constitution defines treaties as the supreme law of the land. Treaties recognize the unique relationship between the federal government and federally recognized American Indian tribes as sovereign nations. Following is a discussion of the Traverse de Sioux Treaty of 1851 and the Yankton Sioux Treaty of 1858.

Traverse des Sioux Treaty of 1851

After Minnesota became a territory in 1849, immigrants moved into southwestern Minnesota to settle and establish farms on the fertile land. This influx of setters increased pressure on the Upper Dakota Sioux to give up their land. In 1851, the Treaty of Traverse des Sioux was signed between the U.S. government and the Sisseton and Wahpeton bands of the Upper Dakota Sioux. The Sisseton and Wahpeton ceded 21 million acres of land to the U.S. government, including most of present-day southwestern Minnesota, in return for cash and annuity payments as well as trade goods, education opportunities, and a reservation. During the treaty signing, the Dakota signed what they thought was a third copy of the treaty but was actually a document known as "traders' papers" that guaranteed some of the annuity payments would be made to fur traders who claimed the Dakota owed them unpaid debt.

The U.S. government also established two reservations along the Minnesota River. However, before the treaty was ratified, the U.S. government changed the terms and only allowed for the Dakota to live on the reservation land until it was needed for settlers, at which time they were forced to move off the land (MHS Undated; MHS 2023).

The U.S. government did not fulfill its treaty obligations, building few schools, charging inflated prices for goods, and not allowing Dakota people to permanently live on the reservations established for them. The

situation became dire by the summer of 1862, when scarce game and a poor harvest led to starvation. Tensions escalated and culminated in some Dakota attacking settlers, which led to an armed government response and the 6-week-long Dakota War of 1862. Upon conclusion of the war, the U.S. government publicly executed 38 Dakota, dissolved their reservation, nullified its treaties with the Dakota, and imprisoned 1,600 Dakota at a concentration camp at Fort Snelling (Zedeño and Basaldu 2004; MHS 2022).

Yankton Sioux Treaty of 1858

In 1858, the U.S. government signed a treaty with the Yankton Sioux Tribe (known as the Ihanktowan Oyate) in order to resolve their competing claims to lands ceded by the Sisseton. The Ihanktowan Oyate agreed to cede land if their ability to access and use the pipestone quarries was protected. This treaty allowed them unrestricted use of the Pipestone quarries.

In 1859, a 1-square-mile area around Winnewissa Falls was designated the Pipestone Indian Reservation to protect the tribe's interests in pipestone quarrying. Despite this designation, homesteaders attempted to settle on the land and trespassing and illegal settlement occurred. The Ihanktowan Oyate complained about the settlers taking their land, which led to the U.S government beginning to remove the homesteaders in 1887. The situation became more complicated when it was discovered that the Burlington, Cedar Rapids, and Northern Railway laid tracks through the Reservation and claimed title to the ROW (Zedeño and Basaldu 2004; NPS 2020).

In 1899, the U.S government convinced the Ihanktowan Oyate to sell their claim to the land while retaining access to the Pipestone quarries and a 40-acre tract of land. The U.S. Government agreed to retain and maintain the land as a national park or reservation land, land which became the Pipestone National Monument in 1937 (NPS 2020).

6.17.4.2 Pipestone Indian School

In 2022, the DOI released an investigative report on American Indian boarding schools across the United States (DOI 2022). This report documented how, for about 150 years, the federal government removed American Indian children from their homes and placed them in boarding schools operated by the federal government and churches.

Indian boarding schools were established to assimilate American Indian youth into a modern U.S. society by separating them from their family, history, and culture, often without parental consent, and training them for futures in industry and farming, and not returning to their tribes.

Indian boarding schools emphasized vocational training and were run like military organizations and effectively destroyed many aspects of American Indian culture by removing youth from their homes, families, cultures, and communities, and suppressing Native languages and names. Assimilation methods included changing Indian names to English names, cutting hair, requiring the use of standard uniforms, and forbidding the use of Indian languages, cultural practices, and religious practices.

Boarding school rules to force this assimilation were often enforced through punishment. The care and conditions of the boarding schools were "grossly inadequate" and there are well-documented instances of abuse; disease; malnourishment; overcrowding; and lack of healthcare for the children. (DOI 2022; NPS 2020).

In 1893, the Bureau of Indian Affairs established the Pipestone Indian School, one of 21 boarding schools in Minnesota, in the northeast corner of the Pipestone Reservation (DOI 2022). The school grew from two buildings to a large complex of 63 buildings, including a hospital and staff housing. The school operated until 1953 when, due to changing government programs and funding, the Pipestone Indian School was closed (Emerson 2002; NPS 2020).

The land and buildings in which the reservation and school were situated are now part of USFWS lands, the Minnesota West Community and Technical College campus, and the Pipestone National Monument. The only extant building is the Superintendent's House, listed on the National Register of Historic Places in 1993, which is located on the Minnesota West Community and Technical College campus. Archaeological surveys conducted in the Pipestone Creek NWR documented numerous historic artifacts in the area of the slope west of the school, and noted that there is potential for the site to provide additional information about the Pipestone Indian School (Lashway and Bauermesiter 2019; Ledezma et al. 2018).

The NPS believes that children who died at the Pipestone Indian School were buried between 1896 and 1904 in a cemetery within the current boundaries of the Monument; however, while a general location has been identified, the exact location is not known. The NPS is actively consulting with tribal partners to provide information and solicit input regarding the next steps in identifying who may be buried in this cemetery and what should be done if the location is determined (Kuphal 2021).

6.17.4.3 Natural Resources as Cultural Resources: Catlinite

Many American Indian tribes' perspective is that cultural resources have evolved in concert with natural resources and that no distinction is present between what is considered a cultural resource and a natural resource (Stults et al. 2016). Therefore, a natural resource is also one of cultural and spiritual value. Based on the sovereign, inherent right to self-determination, tribes collectively oversee sacred responsibilities to the land, waters, and people.

The geology of the Project area is characterized by Sioux Quartzite, which includes pipestone. "Pipestone" is a generic term for soft (e.g., can be carved), fine-grained, sedimentary and metamorphic rocks such as the catlinite, an argillite, quarried at Pipestone National Monument. Both terms are used in this Application to refer to catlinite. The Pipestone National Monument, located south and east of the Project area, was established in 1937 and expanded in 1956 to protect pipestone quarries and the native tallgrass prairie ecosystem (NPS 2017).

Pipestone is considered a sacred resource wherever it occurs and is recognized as the blood of many Dakota tribes. The catlinite quarries in the Pipestone National Monument remain a pilgrimage location and a site of sacred importance for many American Indians. Tribal members quarry catlinite and carve it into objects, including pipes for ceremonial uses and sacred rituals such as individual and group pipe ceremonies, prayer and tobacco offerings, sweat lodges, sun dances, and vision quests.

The Pipestone National Monument is significant for its history of American Indian and European American contact and exploration in the early 1800s, specific quarrying rights, and the Pipestone Indian School (1893 to 1953). The Pipestone National Monument is considered sacred by many tribes because of the pipestone as well as the native prairie plants and animals, ceremonial uses of the landscape, and ancestral connections. Many tribes consider the area around the Pipestone National Monument to be part of the same sacred landscape.

6.17.4.4 Tribal Coordination

Table 1 in Appendix I provides a chronological summary of Magellan's communications with the tribes. Appendix I also contains copies of communications with the tribes. Copies of any future correspondence with tribes, including comments on the archaeological survey reports will be filed to the Project docket.

On August 18, 2022, Magellan sent a Project introduction letter to the following 29 American Indian tribes who are traditionally associated with and have maintained a connection to the Project area. The purpose of these letters was to solicit comments on the Project.

- Cheyenne River Sioux Tribe
- Ponca Tribe of Nebraska

- Crow Creek Sioux Tribe
- Flandreau-Santee Sioux Tribe
- Fond du Lac Band of Lake Superior Chippewa
- Fort Peck Assiniboine and Siouan Tribe
- Iowa Tribe of Kansas and Nebraska
- Iowa Tribe of Oklahoma
- Leech Lake Band of Ojibwe
- Lower Brule Sioux Tribe
- Lower Sioux Indian Community
- Meskwaki Nation (Sac and Fox Tribe of the Mississippi)
- Mille Lacs Band of Ojibwe
- Oglala Sioux Tribe
- Omaha Tribe of Nebraska
- Otoe-Missouria Tribe
- Ponca Tribe of Oklahoma
- Prairie Island Indian Community
- Red Lake Band of Chippewa
- Rosebud Sioux Tribe
- Santee Sioux Tribe of Nebraska
- Shakopee Mdewakanton Dakota Tribe
- Sisseton-Wahpeton-Oyate
- Spirit Lake Tribe
- Standing Rock Sioux Tribe
- Three Affiliated Tribes (Mandan, Hidatsa and Arikara Nation)
- Tribal Nations Research Group (Red Lake Band of Chippewa)
- Upper Sioux Community
- Yankton Sioux Tribe

On September 1, 2022, Magellan sent a Project update letter to the tribes describing an expanded study area. Between October 28 and November 4, 2022, Magellan followed up with each tribe by email to request input on the Project and interest in attending an in-person meeting, and to provide digital copies of the Project introduction letters. Magellan sent a separate email invitation to the tribes for a meeting on December 6, 2022, in Pipestone, Minnesota.

In response to Magellan's outreach, several tribes expressed an interest in the Project, including:

- Fort Peck Assiniboine and Sioux Tribes
- Lower Brule Sioux Tribe
- Lower Sioux Indian Community
- Mille Lacs Band of Ojibwe
- Omaha Tribe of Nebraska
- Prairie Island Indian Community
- Rosebud Sioux Tribe
- Shakopee Mdewakanton Dakota Tribe
- Three Affiliated Tribes (Mandan, Hidatsa and Arikara Nation)
- Upper Sioux Community

The Iowa Tribe of Oklahoma indicated that the Project is outside of their geographic area of interest, had no comment or objections about the Project, and deferred to the Iowa Tribe of Kansas and Nebraska. The following sections provide a summary of comments received in correspondence and/or meetings.

On February 24, 2023, Magellan invited comment on the Draft Route Permit Application by the tribes who expressed an interest in the Project and provided a sharefile link to the Application. Magellan requested comments by March 13, 2023 and invited the tribes to a conference call on March 16, 2023 to discuss tribal comments.

Flandreau Santee Sioux Tribe

In an email dated February 7, 2022, the Tribal Historic Preservation Officer (THPO) of the Flandreau Santee Sioux Tribe commented that additional routes or reroutes should not be planned due to the presence of a culturally significant landscape and other important resources in the Project area. To provide the opportunity to discuss these comments, Magellan scheduled a call with the THPO on February 13, 2023, but the THPO was unable to attend. One February 23, 2023, Magellan sent an email to the THPO offering to coordinate a call that would best fit the THPO's schedule and has not yet received a response. Magellan will continue coordinating with the THPO.

Lower Brule Sioux Tribe

In an email dated November 17, 2022, the Cultural Resource Office of the Lower Brule Sioux Tribe commented that the reroute is a positive development given the importance of the Pipestone National Monument and requested updates throughout the planning and permitting process.

Lower Sioux Indian Community

In a letter dated September 20, 2022, the Lower Sioux Indian Community THPO commented that the Project area holds cultural and/or religious significance to the tribe. Further, the THPO requested continued consultation to identify measures to avoid significant resources that are identified along the reroute. On October 19, 2022, Magellan participated in a videoconference with the THPO to facilitate discussion about the Project. The THPO stated an interest in providing tribal monitors during construction and requested a copy of the meeting presentation. Magellan provided a copy of the presentation by email.

Mille Lacs Band of Ojibwe

In a letter dated March 7, 2023, the Mille Lacs Band of Ojibwe Department of Natural Resources commented about the draft Application that Magellan did a good job consulting with local and regional tribes and had no comments on the Unanticipated Discoveries Plan. The tribe recommended that Magellan expand the Project study area, move the pipeline route outside of the former Pipestone Reservation, and reinitiate tribal consultation to identify a pipeline route that will avoid disturbance to the catlinite vein and other sensitive resources that may exist in the current Project study area. Additionally, the tribe raised concerns about impacts on Pipestone Creek in the event of pipeline spill. Also, the tribe recommended that geologic and cultural resources surveys be undertaken to identify sensitive resources and develop and implement avoidance or minimization measures.

Magellan responded to the comments provided by the Mille Lacs Band of Ojibwe in a letter dated March 21, 2023, stating that coordination with tribal nations is an important part of Magellan's project development and management processes, and confirmed that tribes are invited to participate in the field survey and indicated that the preferred route is outside of the historic Pipestone Quarry. During a call between the acting THPO and Magellan on April 3, 2023, the THPO requested that the pipeline route avoid additional Public Land Survey sections as stated in the March 7 letter.

Omaha Tribe of Nebraska

In an email dated August 29, 2022, the Omaha Tribe of Nebraska requested to be informed of and involved with the Project. On September 28, 2022, Magellan and the Omaha Tribe of Nebraska THPO and staff had an in-person meeting to introduce and discuss the Project. The THPO reiterated an interest in staying informed about the Project and participating in preconstruction survey. The THPO also requested a list of tribes included in Magellan's outreach efforts. In an email dated October 3, 2022, Magellan provided the list of tribes included in their outreach efforts.

On November 23, 2022, Magellan informed the tribe that preliminary archaeological reconnaissance began on November 15, 2022, but was not completed. Magellan also confirmed that the Omaha Tribe of Nebraska will be invited to participate in the archaeological reconnaissance planned for the spring of 2023.

Shakopee Mdewakanton Dakota Tribe

On November 4, 2022, the Shakopee Mdewakanton Dakota Tribe sent an email requesting to be kept apprised of the Project progress. In an email dated November 15, 2022, the tribe asked to consult on the Project and indicated concern about any disturbances to the pipestone vein.

Upper Sioux Community

In a letter dated March 27, 2023, the Upper Sioux Community THPO provided comments on the draft Application, which have been integrated in this Application. The THPO also commented that a reroute around the federal lands does not avoid the sacred landscape that extends beyond the federal lands. While the THPO will continue to engage throughout the permitting process, the THPO stated opposition to the Project.

Tribal Meetings

Magellan organized a meeting in Pipestone, Minnesota, on December 6, 2022. Members and representatives of the following tribes participated in the meeting:

- Fort Peck Assiniboine and Sioux Tribes
- Lower Sioux Indian Community
- Mille Lacs Band of Ojibwe
- Omaha Tribe of Nebraska
- Prairie Island Indian Community
- Rosebud Sioux Tribe
- Shakopee Mdewakanton Sioux Community
- Three Affiliated Tribes (Mandan, Hidatsa and Arikara Nation)
- Upper Sioux Community

The purpose of the meeting was to provide an open forum to share Project information and gather tribal feedback. During the meeting, tribal representatives:

- Voiced questions about permitting, route collocation opportunities, and Project safety measures that Magellan will implement:
- Requested to be active participants in the Project/routing planning process, the cultural resource surveys alongside the archaeological team, and construction monitoring; and
- Requested that a ground penetrating radar survey be conducted to identify potential unmarked graves in the area where the current route passes between two cemeteries north of 116th Ave.

Magellan provided information on the pipeline deactivation and abandonment and reroute construction and permitting process as well as safety measures to be implemented during construction and operation. Magellan also provided a summary of the preliminary archaeological assessment conducted in November 2022 and confirmed that they will work to include tribal participation in the archaeological survey planned for Spring 2023 as well as a ground penetrating radar survey near the existing cemeteries.

Magellan sent an email invitation to the same tribes for an online meeting scheduled for February 6, 2023. Members and representatives of the following tribes participated in the meeting:

- Lower Sioux Indian Community
- Omaha Tribe of Nebraska
- Prairie Island Indian Community
- Shakopee Mdewakanton Sioux Community
- Upper Sioux Community

Prior to the meeting, Magellan emailed a copy of their Tribal Coordination Plan which was developed to engage in meaningful dialog with interested tribes. The key topics addressed at the meeting included a review of the pipeline route and proposed geotechnical core locations, tribal pre-construction survey and construction monitoring, scheduling future meetings based on Project milestones, and Magellan's pipeline safety standards. On February 17, 2023, Magellan sent copies of the meeting notes, a project overview

map set, the Unanticipated Discovery Plan, and list of Magellan's pipeline safety standards to the tribal invitees.

Representatives of the Shakopee Medwakanton Sioux Community and the Upper Sioux Community participated in the virtual call on March 16, 2023. Tribal feedback emphasized the significance and sacredness of the landscape crossed by the pipeline route, concern about potential Project impacts, not only to catlinite, but also to the landscape, and pointed out that using HDD to avoid the catlinite veins represents a disturbance to the landscape. The participants stated a preference for routing the pipeline farther west and north of its currently proposed location.

Magellan will continue to coordinate with interested tribes.

6.18 Air Quality

6.18.1 Existing Environment

The Project will be constructed and operated in Pipestone County, which is designated as in attainment or unclassifiable for the National Ambient Air Quality Standards for all criteria pollutants, which were developed by the USEPA to protect human health and the environment. The criteria pollutants include carbon monoxide (CO), lead (Pb), nitrogen oxides (NO_X), ozone (O_3), particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), particulate matter less than 10 microns in diameter (PM_{10}), and sulfur dioxide (SO_2). Criteria pollutant emissions from pipeline systems are predominantly limited to volatile organic compounds (VOC) from transferring refined petroleum products to and from storage tanks and fugitive VOC emissions from piping components (such as valves, flanges, and pump seals). VOC is a precursor of O_3, which is one of the criteria pollutants. However, because the Project will not involve any aboveground pipeline facilities, no operational air emissions will be generated by the Project.

6.18.2 Construction Impacts and Mitigation

Project construction is not expected to have a substantial impact on air quality. Construction of the pipeline and associated facilities could result in intermittent and short-term fugitive emissions. These emissions would include fugitive dust from soil disturbance and combustion emissions from off-road construction equipment. Emissions from construction equipment and earth-moving activities are presented in Table 6.18-1. These emissions were calculated using emission factors produced by USEPA's Motor Vehicle Emission Simulator (MOVES) software. The calculation details can be found in Appendix J, Air Emissions Calculations.

The amount of fugitive dust emissions would depend on the moisture content and texture of the soils that are disturbed. Generally, however, emissions from construction are not expected to cause or significantly contribute to a violation of any applicable ambient air quality standard because the construction equipment would be operated on an as-needed basis, primarily during daylight hours. Emissions from diesel engines would be minimized because the engines must be built to meet the standards for mobile sources established by the USEPA mobile source emission regulations (40 CFR Part 85).

Magellan will minimize dust generated from construction activities. The contractor will take reasonable steps to control dust. Control practices may include wetting soils on the ROW and limiting vehicle speeds.

6.18.3 Operations Impacts and Mitigation

As previously noted, the Project will not involve any aboveground pipeline facilities; therefore, no operational air emissions will be generated by the Project.

6.18.4 Greenhouse Gas Emissions and Climate Change

Greenhouse gases (GHG) trap solar radiation in the earth's atmosphere, which adds heat to the lower layers of the atmosphere and to the earth's surface. The most important GHGs globally are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), and these are the key GHGs that would potentially be emitted by the activities during Project construction. As previously noted, operation of the Project will not generate operational air emissions, including GHG emissions.

Climate change is a global issue with various regions contributing anthropogenic GHG emissions and being affected by climate change to various degrees. The MPCA lists climate impacts in Minnesota to include higher temperatures, more extreme storms with intense flooding, and changes to ecosystems (MPCA 2022).

As presented in Table 6.18-1, construction of the Project will result in approximately 2100 tons of GHG emissions presented as carbon dioxide equivalents (CO_2e) which represents less than 0.01 percent of the yearly CO_2 emissions in Minnesota[3]. This is a relatively small amount of GHG emissions and will result in negligible effects on global climate change.

Minnesota has established a Climate Action Framework to address and prepare the state for climate change. This framework includes plans to retire and replace inefficient on- and off-road diesel vehicles in the state. Project construction will use on- and off-road diesel vehicles; however, as previously noted, the engines from these vehicles will meet standards for mobile source emissions established by the USEPA (State of Minnesota 2022).

Table 6.18-1: Air Emissions from Construction Activity

Total Emissions	Emissions (tons)										
	VOC	CO	NO_X	PM_{10}	$PM_{2.5}$	SO_2	CO_2	CH_4	N_2O	CO_2e[a]	HAPs
Off-Road Construction Equipment	0.58	2.2	5.5	0.38	0.37	0.0060	2000	0.032	6.8E-05	2100	0.28
Construction Activity Fugitive Dust	--	--	--	4.4	0.7	--	--	--	--	--	--
Project Emission Totals [b]	**0.58**	**2.2**	**5.5**	**4.8**	**1.0**	**0.0060**	**2000**	**0.032**	**6.8E-05**	**2100**	**0.28**

CH_4 = methane; CO = carbon monoxide, CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent; HAPs = hazardous air pollutants; N_2O = nitrous oxide; NOx = nitrogen oxides, $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter, PM_{10} = particulate matter less than 10 microns in diameter, and SO_2 = sulfur dioxide; VOC = volatile organic compounds

[a] CO_2e is the sum of CO_2, CH_4, and N_2O multiplied by the applicable global warming potential expressed in tons.

[b] All values reported with appropriate significant figures. Totals may not match sum of addends due to rounding.

6.19 Permitting

Magellan will ensure that all necessary permits, clearances, and licenses for Project construction and operation are obtained prior to the initiation of any work for which they are required. Table 6.19-1 provides a list of required authorizations and identifies the applicable federal, state, or local agency or other authority in each case.

[3] The state of Minnesota emits approximately 160 million tons of CO_2 per year, or 400,000 tons per day (https://www.pca.state.mn.us/sites/default/files/lraq-1sy21.pdf).

Table 6.19-1: Permit Table

Agency	Regulation	Permit or Approval
U.S. Fish and Wildlife Service	Endangered Species Act	Section 7 Consultation
U.S. Environmental Protection Agency	NPDES (Section 402 of CWA) General Permit for Discharges from Construction Activities (Permit No. MNR12000I)	NPDES Construction Stormwater Permit
		Hydrostatic Water Discharge Permit
Minnesota Public Utilities Commission	Minn. Stat. Ch. 216G/ Minn. R. 7852	Pipeline Routing Permit for pipe with a nominal diameter of 6 inches or more that is designed to transport hazardous liquids
Minnesota Department of Natural Resources	MN Endangered Species Statutes	NHIS Consultation / Concurrence
	MN Water Use Permit	Water Appropriation Permit for trench dewatering and hydrostatic testing
	MN Water Crossing	License to Cross State/Protected Waters
Minnesota State Historic Preservation Office	Minn. R. 7852.1900, subp. 3c requires the Commission to consider impacts on "land of historical, archaeological, and cultural significance."	State Historic Preservation Office Consultation
Minnesota Office of the State Archaeologist	Minn. Stat. 138.31-42; Archaeological work conducted on non-federal, public property including state lands, road rights of way, and local government land requires a license.	License issued by the Minnesota Office of the State Archaeologist
Minnesota County	Pipestone County	Wetland Conservation Act Exemption

§ = Section; Ch. = Chapter; CWA = Clean Water Act; DNR = Department of Natural Resources; Minn. R. = Minnesota Administrative Rules; Minn. Stat. = Minnesota Statute; MN = Minnesota; NHIS = Natural Heritage Information System; NPDES = National Pollutant Discharge Elimination System; subp. = subpart

7. FUTURE ABANDONMENT

Magellan has no plans to abandon the replacement pipeline at this time. Should there be a need to abandon the pipeline in the future, the pipeline would be abandoned in place. Magellan anticipates pipeline abandonment measures would be similar to those described for the corresponding section of the existing pipeline in Section 3.1, Background Information. The pipeline would be purged of residual product, cleaned, disconnected, filled with nitrogen, and capped.

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