

EXECUTIVE SUMMARY

ES.1. INTRODUCTION AND BACKGROUND

The Dakota Access Pipeline (DAPL) is a crude oil pipeline that began operation in 2017. It is approximately 1,100 miles long and transports crude oil from the Bakken and Three Forks plays in North Dakota to a terminus in Patoka, Illinois. Approximately 5,420 feet (1.02 miles) of DAPL are buried in the ground below the bed of the Missouri River at Lake Oahe, which is a U.S. Army Corps of Engineers (USACE) reservoir. Because the USACE is responsible for the management of Lake Oahe, the USACE has jurisdiction over rights-of-way through and under Lake Oahe for oil and gas pipelines under the Mineral Leasing Act (MLA), 30 United States Code (USC) § 185 (the Project). This Environmental Impact Statement (EIS) is being prepared to guide the USACE in its decision whether or not to grant an easement allowing DAPL to cross Lake Oahe under the MLA. The location of this crossing is shown on Figure ES-1.

Prior to the construction of the DAPL crossing under Lake Oahe, the USACE evaluated this crossing under the National Environmental Policy Act (NEPA) through development of an Environmental Assessment (EA) issued on July 25, 2016. Concurrent with issuance of the 2016 EA, on July 25, 2016, USACE granted permission under Section 14 of the Rivers and Harbors Act of 1899 (408 permission) to Dakota Access, LLC (Dakota Access) for a crude oil pipeline crossing under Lake Oahe, as supported by a Finding of No Significant Impact based on the 2016 EA (USACE, 2016). On February 8, 2017, the USACE granted an easement with conditions under the MLA for the crossing. The easement allowed for the installation, construction, operation, maintenance, repair, replacement, and termination of a 30-inch diameter horizontal directional drill (HDD) buried oil pipeline for the purpose of transporting crude oil, and related facilities, at or under Lake Oahe Project in North Dakota, with a 50-foot width plus the ground occupied by the pipeline and related facilities. Operation of the pipeline began on June 1, 2017.

On March 25, 2020, the District Court for the District of Columbia ordered the USACE to prepare an EIS for this portion of the pipeline because the pipeline's "effects on the quality of the human environment are likely to be highly controversial." As a result, to evaluate granting of an easement under the MLA and meet NEPA requirements, the USACE has prepared this EIS in accordance with the Council on Environmental Quality (CEQ) Regulations (40 Code of Federal Regulations [CFR] Parts 1500–1508, 1992), USACE Regulation ER 200-2-2 (33 CFR Part 230), and related environmental compliance requirements.

On July 6, 2020, the District Court vacated the easement for the Lake Oahe crossing and ordered the Dakota Access Pipeline Project (DAPL Project) operation shut down by August 5, 2020. However, on August 5, 2020, the U.S. Court of Appeals for the District of Columbia Circuit ordered a stay of the injunction that ordered Dakota Access to shut down the DAPL Project, although the vacatur of the easement remains. The District Court case was dismissed on June 22, 2021.



This information is for environmental review purposes only.



- Project Centerline
- Standing Rock Sioux Tribe Reservation
- Workspace
- USACE Federal Lands

1:32,000

0 1,000 2,000 Feet

Figure ES-1: Applicant Proposed Action Area
Dakota Access Pipeline Lake Oahe Crossing Project
 Morton County and
 Emmons County, North Dakota



ES.1.1. APPLICANT PROPOSED ACTION—GRANTING AN EASEMENT AT LAKE OAHÉ

When an agency is responding to an application from a non-federal entity for a permit, the proposed action is often what the applicant proposes or is seeking permission to do. The agency will evaluate the applicant’s proposed action along with an array of alternatives to the proposed action before deciding on a preferred alternative.¹ The preferred alternative “is the alternative which the agency believes would fulfill its statutory mission and responsibilities, giving consideration to economic, environmental, technical and other factors.” An agency may decide that an alternative other than the proposed action is the preferred alternative.

In this EIS, the USACE is responding to an application for an MLA easement to cross under Lake Oahe from Dakota Access, and the proposed action is based on Dakota Access’ proposal and referred to as the “Applicant Proposed Action.” The USACE has not selected a preferred alternative in this Draft EIS and will make a selection in the Final EIS upon consideration of all public and agency comments.

The Applicant Proposed Action includes the USACE granting the requested easement with the same conditions as the vacated easement and includes continued operation of the portion of the DAPL Project that crosses Lake Oahe (the Project) and land that exists on either side of the lake, some of which is designated as USACE federal land. The USACE federal lands are real estate interests, specifically, the fee title lands that the USACE owns and manages.

The Applicant Proposed Action is located at the border between Morton and Emmons counties, approximately 0.55 mile north of the northern exterior boundary of the Standing Rock Sioux Tribe (SRST) reservation and does not cross the reservation. The specific area impacted by the Applicant Proposed Action is defined as the pipeline crossing at Lake Oahe and the portions of pipeline that extend approximately 911 feet east of the lake’s east bank and approximately 1,138 feet west of the lake’s west bank. Approximately 1,103 feet (0.21 mile) of the pipeline in the Project Area passes beneath surfaces designated as USACE federal lands.

Construction workspace areas were used in support of the HDD installation of the pipeline. These construction workspace areas are included as part of the Applicant Proposed Action because they were directly connected to the ability for Dakota Access to complete the Lake Oahe crossing. Connected Actions associated with the Applicant Proposed Action are also included in this evaluation and include the permanent easement on private lands within the vicinity of the Lake Oahe crossing. The HDD entry and exit point workspaces and stringing area and associated easements were located on private land outside of the federal lands and are considered Connected Actions in this analysis.

ES.1.2. PURPOSE AND NEED

Because the Project crosses Lake Oahe and the associated USACE-managed real estate, the Project requires an easement under the MLA. The USACE is responsible for evaluating applications and for granting an easement under the MLA at Lake Oahe. Because an easement had previously been granted

¹ *Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulation* (CEQ, 1981)

and the pipeline constructed, the USACE must consider whether the pipeline should remain across its property or be removed. As such, the USACE is the lead federal agency for the preparation of an EIS for this Project in compliance with the requirements of NEPA and the CEQ regulations for implementing the procedural provisions of NEPA (40 CFR § 1500–1508).

The purpose and need for this EIS is to evaluate whether a new easement can be issued under the MLA for the DAPL Project to cross USACE-managed federal lands at Lake Oahe. This evaluation considers the Project purpose of the Applicant Proposed Action to be the purpose of the DAPL Project (to transport up to 1,100,000 barrels per day (bpd) from the Bakken and Three Forks production region in North Dakota to a crude oil market hub located near Patoka, Illinois, and ultimately to refineries located in the Midwest and the Gulf Coast), but the analysis is limited to effects of allowing the pipeline to cross federally owned lands at Lake Oahe in Morton and Emmons counties, North Dakota (the Project).

ES.1.3. AUTHORITY AND SCOPE OF EIS

As the lead federal agency, the USACE published a Notice of Intent (NOI) in the Federal Register [85 Fed. Reg. 176 (September 10, 2020)] to advise the public that the USACE will prepare an EIS and open the public scoping period to identify issues and reasonable alternatives to the Applicant Proposed Action. This EIS has been prepared in accordance with the CEQ Regulations (40 CFR Parts 1500–1508, 1992), USACE Regulation ER 200-2-2 (33 CFR Part 230), and related environmental compliance requirements. The Cheyenne River Sioux Tribe (CRST), State of North Dakota, U.S. Fish and Wildlife Service (USFWS), and U.S. Environmental Protection Agency (EPA) participated as cooperating agencies in preparation of the draft EIS. The Oglala Sioux Tribe participated as a cooperating agency for 6 months (from March 2021 through September 2021). The SRST participated as a cooperating agency for 10 months (from March 2021 through January 2022). A cooperating agency is an agency that provides input into specific resource areas because it has jurisdiction by law or has special expertise with respect to environmental resources issues associated with a project (40 CFR § 1501.7).

ES.1.4. SUMMARY OF PUBLIC/TRIBAL OUTREACH AND COORDINATION

On September 10, 2020, the USACE published an NOI to prepare an EIS in the Federal Register. The USACE issued a series of notices in the Federal Register intended to keep the public informed about the EIS public scoping process. The notices were also provided to the public through the USACE’s Project website. In addition to the NOI, scoping coordination letters were sent to public entities, including individuals, agencies, Tribes, and others that may have an interest, or previously had expressed interest, in the Project. The coordination letters were sent in September 2020 inviting participation in the public scoping process.

Due to the COVID-19 pandemic, the Omaha District conducted two virtual public meetings on October 15, 2020, and October 16, 2020, respectively. The public scoping period was open from September 10, 2020, to October 26, 2020. Many interested parties requested an extension of the scoping period; therefore, the scoping period was extended from October 23, 2020, to November 26, 2020. In addition to the public scoping meetings, scoping input was accepted via mail, email, and phone message.

A total of approximately 49,200 comments were received during scoping through a variety of methods (email, mail, voicemail, Facebook chat, etc.). Members of the public, Tribes, local and state governmental

agencies, non-governmental organizations, and other stakeholders, all provided comments during the aforementioned period. The overwhelming majority of input received focused on environmental justice, along with the purpose and need of the Project, reliability and safety, and water quality. All input will be included in the Administrative Record for this Project.

The USACE also sought input from the Tribes who live near the Project Area through multiple avenues, including scoping meetings and comments, participation as cooperating agencies in development of the EIS to provide technical support and knowledge in their areas of special expertise, and through government-to-government consultation (see Section 1.5 and Table 1.5-1 in Chapter 1, Introduction and Background, of the EIS). All Tribes in the USACE's *Programmatic Agreement for the Operation and Management of the Missouri River Main Stem System for Compliance with the National Historic Preservation Act* (USACE, 2004; Programmatic Agreement) were also provided a preliminary version of the Draft EIS prior to publication to gather additional Tribal input.

ES.2. ALTERNATIVES

As required by NEPA and the agency's NEPA implementing regulations, the USACE developed five alternatives to the Project for evaluation in this EIS. The environmentally preferable alternative will be identified as part of the Record of Decision in accordance with NEPA implementing regulations.

ES.2.1. NO ACTION ALTERNATIVES

The CEQ regulations for implementing NEPA require the evaluation of the No Action Alternative (40 CFR § 1502.14(c) 2012). In general, any No Action Alternative is unlikely to meet a project's purpose and need but should be evaluated to inform decision making and allow an agency to understand the effects of an action in consideration of meeting a purpose and need.

Under the No Action Alternative, the USACE would not grant an easement to cross federal property at Lake Oahe, which results in the requirement to abandon the existing pipeline either by removal or in -place. Each type of abandonment is considered as a separate No Action Alternative. The denial of the easement and removal of the pipeline segment beneath Lake Oahe would likely result in a pipeline reroute. Therefore, the impacts of Alternatives 1 and 2 are considered throughout the EIS in connection with a possible reroute under Alternative 5.

ES.2.1.1. Alternative 1: Easement is Not Granted and Restoration to Pre-Pipeline Conditions Required

Alternative 1 is a No Action Alternative where the USACE would not grant an easement to cross the federal property at Lake Oahe and would require restoration of the USACE -administered federal lands to pre-pipeline conditions. Alternative 1 includes the removal of approximately 7,500 feet of the 30-inch diameter pipeline within the Project Area, with approximately 6,400 linear feet buried approximately 95 to 126 feet below Lake Oahe. Water depths within Lake Oahe range from approximately 3 feet at the shallowest point to 30 feet at the deepest point within the footprint of the pipeline crossing. Conceptual excavation would require removal of 12,300,000 cubic yards of soil within an approximately 77-acre

footprint, with an additional 1,400 acres onshore for temporary spoil storage. Due to the extent of the excavation required, abandonment by removal is anticipated to take from 6 to 20 years or more for completion.

ES.2.1.2. Alternative 2: Easement is Not Granted and No Further Action

Alternative 2 is a No Action Alternative where the USACE would not grant an easement to cross federal property at Lake Oahe and the 7,500 feet of pipeline within the Project Area would be abandoned in place. This segment would be abandoned in place according to 49 CFR § 195.402(10) requirements, including purging the pipeline segment of oil and permanently sealing. Abandonment activities would likely be completed in 1 year.

ES.2.2. ACTION ALTERNATIVES

ES.2.2.1. Alternative 3: Grant Requested Easement Consistent with Vacated Easement Conditions (Applicant Proposed Action)

Under Alternative 3, the USACE would grant the requested easement to cross federal property consistent with conditions of the now vacated easement issued on February 8, 2017, the only difference being that the volume of oil allowed under the easement would increase to 1.1 million bpd. The vacated easement originally allowed for the transfer of 570,000 bpd. The easement would allow for the operation, maintenance, repair, replacement, and termination of the existing 30-inch diameter buried pipeline under Lake Oahe, which would continue to transport crude oil from North Dakota to Illinois. The easement would cover a 50-foot width plus the ground occupied by the pipeline and related facilities. Thirty-six conditions were included in the previous easement language (see Appendix D, Alternative 3 Easement Special Conditions). Dakota Access currently operates the existing pipeline under these 36 easement conditions. This alternative would not require any additional construction activities, and Dakota Access would continue to implement monitoring plans, routine inspections, and maintenance in compliance with state and federal regulations. Since the pipeline has been constructed and placed into operation at the time of completion of this EIS, Alternative 3 examines the known impacts of past construction activities under the “Current Affected Environment” subsection for each resource within Chapter 3, Affected Environment, Impacts, and Mitigation.

ES.2.2.2. Alternative 4: Grant Requested Easement with Additional Conditions

Alternative 4 is similar to Alternative 3 (the Applicant Proposed Action) as the USACE would grant the requested easement allowing for the operation, maintenance, repair, replacement, and termination of the DAPL Project; however, the easement would be granted with additional conditions and modifications. Coordination with cooperating agencies and Tribes, review of the original easement conditions, and additional analysis developed during this EIS considering scoping comments and commitments made by Dakota Access have contributed to the development of additional conditions beyond those included in the originally granted easement. Additional conditions aim to avoid, minimize, or mitigate potential impacts

of a crude oil release. The additional easement conditions would become requirements when added to the easement. The additional conditions are described in detail in Section 2.6.2 and respective resource impact analysis sections throughout Chapter 3; they include, but are not limited to: developing plans for alternative drinking water supply and groundwater monitoring; performing visual surveys, surface water sampling, and sediment and/or benthic macroinvertebrate sampling; conducting fish tissue residue analyses; conforming to bald eagle management guidelines; implementing new leak detection technology; implementing a culturally appropriate food distribution program; and coordinating to undertake systematic subsistence studies.

Similar to Alternative 3, this alternative would not require any construction activities within the Project Area. The additional measures are expected to generally result in increased operational safety of the pipeline and facilitate incident notification and shutdown procedures. Additional on-ground inspections at the crossing would require additional personnel to be on-site on a weekly basis.

ES.2.2.3. Alternative 5: North Bismarck Reroute

If an easement is not granted under Alternative 1 or 2, it is likely that Dakota Access will pursue a pipeline reroute. Alternative 5 presents a reroute of the DAPL Project. The North Bismarck Reroute is one potential reroute Dakota Access may consider, which was initially evaluated in the 2016 EA. For the purposes of this NEPA analysis, it is being used as a proxy to analyze impacts associated with a reroute. As such, it was selected for evaluation in this EIS as a proxy for the reroute, although the exact route that Dakota Access would seek is unknown. This route would require further evaluation and siting by the State of North Dakota, which approved the siting of the pipeline in its current location. This alternative route would be 111 miles long and approximately 50 miles north of the existing Project location. It would begin in Mercer County, North Dakota, where it would connect to customer receipt points and extend southeast through Oliver, Morton, Burleigh, and Emmons counties, crossing the Missouri River approximately 8.5 miles up-river of Bismarck/Mandan and approximately 38.5 miles upstream of the current location. Dakota Access would need to acquire federal, state, and local permits for the approval of this alternative, including a new certificate of corridor compatibility and route permit from the North Dakota Public Service Commission (NDPSC), which could take a minimum of 2 years. Implementation of Alternative 5 would require that the existing pipeline be abandoned; therefore, Alternative 5 results from and requires the implementation of Alternatives 1 or 2 and their associated impacts. Combined impact determinations are provided for each resource.

ES.3. ENVIRONMENTAL CONSEQUENCES

The environmental consequences of the Project on the human environment were analyzed for each of the five alternatives. When considering the environmental consequences, the duration, intensity, and significance of any potential impacts were assessed.

Duration of the impacts are described according to the following four levels: temporary, short-term, long-term, and permanent.

- Temporary impacts generally occur for about 1 year, with the resources returning to preconstruction conditions almost immediately.
- Short-term impacts would occur for 1 to 3 years.
- Long-term impacts would last more than 3 years, although eventually would recover to preconstruction conditions.
- Permanent impacts are defined as activities that modify resources to the extent that they may not return to preconstruction conditions during the life of the Project, such as with the construction of an aboveground facility.

Intensity of the impacts are described according to the following four levels: negligible, minor, moderate, and major:

- Negligible impacts occur when the resource would not be affected in a perceptible way and as of such little consequence as to not require additional consideration or mitigation.
- Minor impacts occur when there would be a barely perceptible impact on the resource; however, the impact would not result in an overall change in resource character or value and the resource can continue to be relied upon for its current use.
- Moderate impacts occur when there would be an indisputably perceptible impact on the resource and an overall change in the resource character or value; however, the resource can continue to be relied upon for its current use.
- Major impacts occur when there would be an indisputably perceptible impact on the resource that would likely result in an overall change in resource character or value and the resource cannot be relied upon for its current use.

An impact would be considered significant if it would result in a permanent and major adverse change in the physical environment, or if it would result in an overall major risk in the event of a crude oil release. The analysis also addresses direct and indirect effects collectively by resource.

This Executive Summary focuses on effects (adverse and beneficial) that are moderate or major and long-term or permanent as well as the primary areas of interest to the public and Tribes. Further, the EIS includes detailed effects analysis of all five alternatives under each resource.

ES.3.1. RELIABILITY AND SAFETY

The reliability and safety of the Project is a primary area of interest for the public and Tribes, who have expressed concern that a release would impact Tribal hunting and fishing rights as well as water quality in the Missouri River. The transportation of crude oil via pipeline is regulated by the Pipeline and Hazardous Materials Safety Administration (PHMSA) pursuant to 49 CFR Part 195. The Project has been designed to meet or exceed the minimum requirements of PHMSA regulations. The Project design standards include specifications regarding pipe design such as increased pipe wall thickness for improved stability and pipe coatings that reduce the risk of corrosion, pipe burial depth, locations of mainline valves,

pre-operational inspections and testing, communication and monitoring systems, landowner outreach, release response capabilities, and oil cleanup exercises and drills. Dakota Access has also developed two response plans submitted to PHMSA—the Geographical Response Plan (GRP) and Facility Response Plan (FRP)—in compliance with 49 CFR 194.107 (see Appendix F). These plans include notification procedures, release detection and mitigation procedures, and training procedures, among other details.

As Lake Oahe is considered a high -consequence area (HCA), Dakota Access was required to prepare a pipeline integrity plan for the Project to identify potential threats and establish detailed inspection requirements. An independent risk assessment has been conducted to review these risks along with other concerns expressed by the SRST. Risk analysis and the probability of a crude oil release considered in terms of frequency is discussed in Section 3.1, Reliability and Safety. Construction and operation of the Project has resulted in no crude oil releases from the pipeline at the Lake Oahe crossing or elsewhere along the DAPL Project right-of-way to date. Ten releases have occurred at aboveground, upland facilities involving less than five barrels (approximately 210 gallons) of released crude in each case. All crude oil was recovered, meaning that response activities removed the crude oil from the impacted areas. Dakota Access stated that it evaluates every release for cause and once determined, corrective actions are implemented to prevent recurrence. Similarly designed facilities are then proactively reviewed for necessity of like preventative and/or mitigative measures. Dakota Access also internally analyzes accident causes across the organization for trends and communication findings to raise awareness across operations.

Not granting the easement and removing the pipeline under Alternative 1 would result in environmental and safety risks, including risks associated with the potential release of residual hydrocarbons from the drained pipeline and construction hazards that could result in injury or fatality of workers. However, the likelihood of a fatality is determined to be very unlikely based on Occupational Safety and Health Administration (OSHA) statistics. Following abandonment by removal, there would be no further risk associated with a crude oil release. Abandoning the pipeline in place under Alternative 2 would involve risks associated with the potential release of residual hydrocarbons from the drained pipeline, although any leaks would be onshore and more easily detectible, contained, and remediated. Following abandonment, there would be no further risk of a crude oil release at Lake Oahe.

Potential hazards associated with granting the easement under Alternatives 3 and 4 would be associated with a potential crude oil release. In accordance with agency requirements and public input, Dakota Access developed two modeling reports presenting the results of 1,160 modeling runs covering various environmental conditions (e.g., wind speed/direction, water levels, water flow, ice cover) for the impacts of a worst-case discharge (WCD). Of these modeling simulations, 18 representative scenarios were selected considering mitigated and unmitigated responses, ice and no-ice conditions, varying seasons of the year, and other possibilities that would alter the impacts of a WCD. The transport and fate of contaminants from a crude oil release at or adjacent to Lake Oahe under Alternatives 3 and 4 were evaluated based on the crude oil consequence modeling of a 10-day, unmitigated full-bore release (FBR) from two locations: the ND-380 valve site and a hypothetical pipe at the bottom of Lake Oahe. Based on this evaluation, harmful crude oil constituents would affect the water surface, water column, and shoreline of Lake Oahe and the Cannonball River at varying distances and concentrations. Based on historic pipeline data, the likelihood of an FBR along the pipeline under Lake Oahe or at the adjacent valve site occurring was determined to be remote to very unlikely, respectively.

Unmodeled release scenarios were also evaluated, including a slow or rapid release of crude oil beneath Lake Oahe and a slow release at the ND-380 valve site. Crude oil released underground is expected to involve a slow seepage of oil that would likely emerge onshore, with the potential to flow downslope to the Cannonball River and Lake Oahe. The likelihood of a slow release from the ND-380 valve site and pipeline was determined to be remote to unlikely. Section 3.1.6.3, [Reliability and Safety, Impacts and Mitigation] Alternative 3, describes in detail the rationale for this conclusion. Similarly, impacts associated with a slow-release valve scenario would be based on slower release rates and the quantity of oil reaching the surface, presenting a minor risk to sensitive resources.

Under Alternative 4, increased mitigation measures, more advanced leak detection and protection tools, and more stringent conditions would further increase the reliability and safety of the pipeline.

Under Alternative 5, new potential hazards could occur as a result of construction, abandonment, and operation. Pipeline abandonment involves the risk of an inadvertent release of hydrocarbons, although a release would be quickly detected and promptly contained and remediated. Construction and operation hazards could result in injury or fatality of workers. The likelihood of a fatality would be very unlikely based on OSHA statistics. Operational impacts due to an inadvertent release of crude oil from the pipeline would be similar to those described for Alternatives 3 and 4, although the North Bismarck Reroute would cross more HCAs (including two HCA urban areas), waterways, grasslands, and agricultural areas than the existing route. Similar to Alternatives 3 and 4, an FBR has a remote to very unlikely potential of occurrence. Section 3.1.6.5, [Reliability and Safety, Impacts and Mitigation] Alternative 5, describes in detail the rationale for this conclusion. The use of truck and rail would result in an increased risk from accidents that result in harm to the environment and human lives, including increased emissions and a greater frequency of crude oil releases, fires, and explosions than with a pipeline. Rail has a notable increased risk of fatality resulting in a risk ranking of major under Alternative 5, which is considered significant. Including the extensive construction impacts associated with Alternative 1 and the fatality impacts associated with trucking or rail under Alternative 5, the combined construction and operational impacts on reliability and safety for Alternatives 5 and 1 or Alternatives 5 and 2 would be significant.

ES.3.2. GEOLOGY AND SOILS

ES.3.2.1. Geology

Abandonment by removal activities associated with Alternative 1 would result in impacts on geologic resources. Removal of the pipe from under Lake Oahe would have a significant long-term, if not permanent, effect and is anticipated to be a major alternation of the resource character due to the deep excavation of the lakebed by mixing and/or breaking up geologic strata. Alternative 1 would have a long-term, major, significant impact on Lake Oahe, its tributaries, and other sensitive resources should cofferdams, bench slopes, or stockpiles of excavated loose, saturated sediments fail and cause a landslide. Alternative 2 would not have these same impacts because the pipeline would be abandoned in place.

The Project's operational impacts on geologic resources under Alternative 3 and 4 would be negligible because the ground contours have been restored and stabilized to pre-construction conditions, as feasible. However, should a crude oil release occur adjacent to or under Lake Oahe, impacts on geologic resources would range from temporary, minor impacts (e.g., shallow excavation to replace contaminated soils) to

long-term, major impacts similar to Alternative 1 (e.g., deep excavation to replace contaminated sediments and repair/replace the pipeline in Lake Oahe). As such, a WCD crude oil release would result in a negligible to moderate risk to geologic resources. As the potential for a crude oil release is considered remote to very unlikely, these alternatives are not expected to have significant impacts.

Under Alternative 5, impacts from the construction of the North Bismarck Reroute on surface geological resources would be expected to be temporary and minor due to ground disturbance from construction and abandonment activities; and permanent, minor impacts from the permanent placement of 11 aboveground mainline valves. The use of trucking and/or rail to transport oil during construction would be negligible under normal operating conditions. However, if a crude oil release occurs, the excavation of contaminated materials would temporarily impact surficial geology in the area of the release; the magnitude of the impact would be dependent on the size of the release. Under Alternative 5, operational impacts due to an inadvertent release of crude oil from the pipeline would be comparable to those described for Alternatives 3 and 4. Additionally under Alternative 5, transportation of oil by truck or rail would result in more frequent, lower volume releases, which would cause short-term, minor impacts. Overall, the combined impacts from Alternatives 1 and 5 on geological resources would be significant given the intensity and duration of impacts from Alternative 1. Similarly, combined impacts from Alternatives 1 and 5 may pose a significant geologic hazard associated with the potential for landslides.

ES.3.2.2. Soils

If the easement is not granted and the Project pipeline is abandoned by removal, Alternative 1 would result in long-term, moderate impacts on soils due to the large volume of sediment that would be excavated from 77 acres of the lake bottom, along with 1,400 acres of upland disturbance along both shorelines associated with spoil storage. About 30 percent of the affected upland area is considered prime farmland. Impacts often result from soil compaction, soil loss from erosion of stockpiled material, and permanently altered soil conditions. However, overall impacts would not be considered significant. Alternative 2 would not have these same impacts because the pipeline would be abandoned in place.

Operational impacts under Alternatives 3 and 4 resulting from an inadvertent release of crude oil would result in temporary to long-term, minor to moderate impacts. However, as previously described, the potential of occurrence is extremely low and the risk of impacts on soils is negligible to minor.

Alternative 5 impacts would be similar to those of Alternatives 3 and 4 were a release to occur. The combined impacts from Alternatives 1 and 5 or Alternatives 2 and 5 on geological resources would not be significant.

ES.3.3. WATER RESOURCES

ES.3.3.1. Surface Water

Abandonment activities associated with Alternative 1 would result in impacts on water quality and water intakes. While Project design would incorporate avoidance of mapped waterbodies to the extent possible, Alternative 1 would have long-term, moderate, non-significant impacts on surface water due to abandonment activities. Additionally, the potential release of contaminants from equipment and the elevated turbidity levels within the water column during excavation would directly affect water quality of

Lake Oahe and associated water intakes. Sediment transport modeling indicates suspended sediments could travel as far as 160 miles downstream. Alternative 2 would be less likely to affect surface waters as ground disturbance would be limited. Potential stormwater runoff from upland workspaces would result in temporary, negligible impacts on surface waters if appropriate best management practices for erosion control are implemented.

Alternatives 3 and 4 include the risk of a crude oil release occurring adjacent to or under Lake Oahe. In the event of a WCD crude oil release under Alternative 3, short- to long-term and minor to moderate water quality impacts would occur on surface waters. With the implementation of mitigation measures, temporary to long-term, minor to major impacts would occur on agricultural and drinking water intakes, depending on the depth of the intake and how long the intakes are offline. The SRST, CRST, and Mni Wiconi Project drinking water intakes would not likely be affected.

Under Alternative 4, the consequences of a release would be similar but less intense than Alternative 3 on water quality and surface water intakes resulting in temporary to long-term, minor to major impacts with an overall risk of negligible to moderate. To further reduce the impacts of a crude oil release, Alternative 4 includes additional easement conditions, including that Dakota Access develop a plan for supplying an alternative source of clean, safe water to any affected water intake users for agricultural applications and drinking water in the event a crude oil release occurs at the Lake Oahe crossing until cleanup occurs and water at the intake is clean and safe for the applicable uses. However, as the potential for a crude oil release is remote to very unlikely, these alternatives would not significantly impact surface waters.

Under Alternative 5, impacts from construction and abandonment activities may affect two source water protection areas and 149 mapped intermittent and perennial waterbodies due to increased turbidity and stormwater runoff. Similarly, installation and maintenance of best management practices would reduce the extent of potential impacts on surface water. The use of trucking and/or rail to transport oil during construction would have short-term, minor impacts on surface waters and downstream intakes should a release occur. Impacts during operations due to an inadvertent release of crude oil from the pipeline would likely be comparable to those described for Alternatives 3 and 4, with temporary to long-term, minor to major impacts on water quality and surface water intakes, although the potential for occurrence is low.

ES.3.3.2. Groundwater

Dewatering associated with abandonment by removal activities for Alternative 1 would have long-term, minor impacts on groundwater that would not be significant. Impacts would occur from spoil storage areas, which may reduce soil permeability. Alternative 2 would have no impact on groundwater because the pipeline would be abandoned in place.

Under Alternatives 3 and 4, a crude oil release occurring adjacent to or under Lake Oahe would result in temporary, minor (e.g., from a shallower release) to long-term, major impacts depending on the location, volume, and extent of the release if it resulted in groundwater contamination. However, the potential for occurrence is remote to very unlikely.

To further reduce the impacts of a crude oil release, Alternative 4 includes a new easement condition that Dakota Access shall install a groundwater monitoring network within surficial aquifers connected to Lake

Oahe to monitor for the presence of petroleum-based hydrocarbons and make sampling results publicly available online and to the USACE, North Dakota Department of Environmental Quality (NDDEQ), and interested Tribes.

Under Alternative 5, impacts are anticipated to be temporary to short-term and minor from construction disturbances mitigated through erosion controls and the use of truck and/or rail for transportation during construction. A crude oil release during operation of the pipeline would result in similar impacts on groundwater as Alternative 3. The combined impacts from Alternatives 1 and 5 and the combined impacts from Alternatives 2 and 5 on groundwater would not be significant.

ES.3.3.3. Wetlands and Floodplains

Abandonment by removal activities associated with Alternative 1 would have long-term, minor impacts on wetlands associated with access roads and construction, as well as approximately 4.2 acres of wetlands and an approximately 0.6-acre pond in conceptual spoil storage locations outside the Project Area.

The Federal Emergency Management Agency has identified both sides of Lake Oahe as a Zone D area, which indicates areas with possible but undetermined flood hazards. The State of North Dakota Department of Water Resources' Risk Assessment Map Service indicates that a 500-year flood risk on both sides of the lake extend into adjacent areas that cross the Project workspace.

Abandonment by removal activities associated with Alternative 1 would have long-term, minor impacts on floodplains due to the development of spoil storage areas and access roads, which would inhibit water storage and potentially exacerbate downstream flooding.

Under Alternative 2, there may be impacts from minor ground disturbance during pipeline abandonment, resulting in temporary, negligible impacts on floodplains.

Long-term, moderate impacts on up to 268 mapped National Wetlands Inventory wetlands (approximately 2,507 acres) located adjacent to Lake Oahe may occur if a WCD crude oil release occurs under Alternative 3 or 4. Anticipated contamination impacts that diminish ecological functions include, but are not limited to, wildlife support and water quality processes. However, the likelihood of occurrence is remote to very unlikely, resulting in a negligible to minor risk to wetlands. Further, Dakota Access has in place a number of measures to mitigate a release, including automated valve shutoffs and plans for dispatching personnel to the Lake Oahe valves if communications with the valves are compromised.

Under Alternative 5, impacts from construction and abandonment activities would potentially have temporary to long-term, minor to moderate impacts on up to 77 mapped National Wetlands Inventory wetlands (totaling about 21 acres) due to temporary trenching and filling during construction activities. However, implementation of wetland permit restoration and mitigation requirements would reduce or offset these impacts. The use of trucking and/or rail to transport oil during construction would also have impacts on wetlands should a release occur. During operation of a reroute under Alternative 5, there is the potential of a crude oil release resulting in temporary to long-term and minor to moderate impacts on wetlands depending on site specific details. Combined construction and operational impacts on wetlands for Alternatives 1 and 5 and Alternatives 2 and 5 would not be significant.

Alternative 5 may have temporary to short-term, negligible to minor impacts on floodplains associated with construction trenching and spoil piles and operations. Combined construction and operational impacts on floodplains for Alternatives 1 and 5 and Alternatives 2 and 5 would not be significant.

ES.3.4. VEGETATION AND NOXIOUS WEEDS

If the easement is not granted and the pipeline is abandoned at the Lake Oahe crossing under Alternative 1, potential impacts on vegetation from abandonment activities would occur. Alternative 1 would have localized, long-term, moderate intensity, but non-significant impacts on vegetation including the smothering of approximately 77 acres of vegetation by excavation spoils until abandonment by removal is complete. The use of approximately 2,000 to 7,000 trees for timber mats, and the use of aquatic and emergent aquatic plants within Lake Oahe to alter flow around the cofferdams, would also be considered a long-term impact.

Alternative 1 is expected to result in impacts from noxious weeds known to occur within the Project Area including leafy spurge (*Euphorbia esula*) and Canada thistle (*Cirsium arvense*). Alternative 1 would have short- to long-term, moderate impacts should noxious weeds become established within construction areas. However, the implementation of mitigation measures in the Environmental Construction Plan (Appendix G of the EA [USACE, 2016]) would decrease the extent of proliferation. Alternative 2 would have a lesser effect on the spread of noxious weeds as earthwork associated with abandonment activities would be limited. Ground disturbance results in short- to long-term, minor impacts, but with the implementation of mitigation measures in the Environmental Construction Plan, potential impacts are not expected to be significant.

Assuming cleanup efforts occur promptly to mitigate the effects of a crude oil release adjacent to or under Lake Oahe under Alternatives 3 and 4, short- or long-term, minor to moderate impacts on shoreline vegetation could be reduced to temporary impacts of minor intensity. Given the remote to very unlikely likelihood of a release occurring, the resulting risk of a release on vegetation would be negligible and not result in a significant impact.

With the implementation of weed management measures, normal operations would be expected to have short- to long-term, minor, localized impacts on the spread of noxious weeds that are not significant.

Under Alternative 5, impacts from construction and abandonment activities would be expected to involve short-term, minor to moderate impacts on vegetation due to temporary ground disturbance along the right-of-way. The use of trucking and/or rail to transport oil during construction would have short- to long-term, minor to moderate impacts on vegetation should a crude oil release occur. Noxious weed spread and establishment impacts associated with Alternative 5 would be short- to long-term and minor to moderate for construction and abandonment activities. Operational impacts due to an inadvertent release of crude oil from the pipeline would be comparable to those described for Alternatives 3 and 4.

ES.3.5. WILDLIFE AND AQUATIC RESOURCES

ES.3.5.1. Wildlife

Wildlife in the affected area includes important game species, including subsistence species and migratory birds, which are protected under the Migratory Bird Treaty Act. The Project Area is within the Central Flyway, one of four major migratory routes relied upon by migratory birds for spring and fall travel through North America. In addition, the Project Area is located within two bird conservation regions that together contain 38 migratory bird species designated by the USFWS as Birds of Conservation Concern. Seven and eight species recognized as Level I and II Species of Conservation Priority by the State of North Dakota also occur in the affected area and have the potential to be affected by the Project. They include migratory birds, a non-migratory bird, mammals, reptiles, insects, and an aquatic invertebrate.

If the easement is not granted and the pipeline were abandoned by removal at the Lake Oahe crossing under Alternative 1, impacts on wildlife from abandonment and removal activities would occur. Alternative 1 would have long-term, major impacts on wildlife from habitat loss during removal activities, and wildlife injury and mortality caused by dredging activities and spoil storage in and adjacent to Lake Oahe. As habitat and local wildlife populations would be expected to recover within two to three seasons following removal and restoration activities, impacts would not be significant. Alternative 2 would not have these same impacts because the pipeline would be abandoned in place.

Granting the easement under Alternatives 3 and 4 would result in no additional construction impacts, and no disturbance to wildlife or wildlife habitat from routine operation and maintenance of the buried pipeline would be anticipated. Short- to long-term moderate to major impacts would occur on wildlife should a WCD crude oil release occur as a result of Alternatives 3 or 4. A WCD release event would result in habitat contamination and wildlife injury and mortality. However, the potential for a WCD crude oil release is considered remote to very unlikely; therefore, these alternatives are not expected to have significant impacts.

Under Alternative 5, impacts from construction of the North Bismarck Reroute on wildlife would be expected to involve temporary and permanent, negligible to moderate impacts on wildlife due to habitat disturbance, lighting, and noise during construction activities; and permanent, minor impacts from the construction of 11 aboveground mainline valves. With the implementation of mitigation requirements, impacts would not be significant. Temporary impacts from lighting and noise would occur from activities associated with abandonment of about 100 miles of the existing pipeline. The use of trucking and/or rail to transport oil during construction would have short- to long-term, minor to moderate impacts on wildlife due to noise and light disturbance, potential collisions with vehicles, and harm from potential crude oil releases in the event of an accident. Operational impacts due to an inadvertent release of crude oil would be comparable to those described for Alternatives 3 and 4, with short- to long-term moderate to major impacts but a very unlikely potential of occurrence.

ES.3.5.2. Aquatic Resources

Abandonment by removal activities associated with Alternative 1 would have short- to long-term, major impacts on aquatic resources from habitat loss during removal activities, and injury and mortality of organisms caused by dredging activities and spoil storage in and adjacent to Lake Oahe. Impacts would be significant as mortality would be expected along with long-term reduced productivity of local aquatic species populations. Alternative 2 would not have these same impacts because the pipeline would be abandoned in place.

Granting the easement under Alternatives 3 and 4 would result in short- to long-term, moderate to major impacts on aquatic resources should a WCD crude oil release occur adjacent to or under Lake Oahe due to habitat contamination and aquatic and semi-aquatic species injury and mortality. Remediation efforts may also result in short- to long-term minor to moderate impacts on aquatic resources. Because the potential for a WCD crude oil release is considered remote to very unlikely, these alternatives are not expected to have significant impacts.

To further reduce the risk and impacts of a crude oil release, Alternative 4 includes additional easement conditions requiring Dakota Access to:

- Conduct biannual visual surveys, surface water sampling, and sediment and/or benthic macroinvertebrate (BMI) sampling at the Lake Oahe crossing to monitor for the presence of petroleum-based hydrocarbons, and make sampling results publicly available online and to the USACE, the NDDEQ, and interested Tribes; and
- Conduct polycyclic aromatic hydrocarbons fish tissue sampling should a crude oil release occur to support when polycyclic aromatic hydrocarbon levels in fish return to pre-release conditions and make testing results publicly available online and to the USACE, the NDDEQ, and interested Tribes.

Under Alternative 5, impacts from construction and abandonment activities on aquatic resources would be expected to involve temporary and minor to moderate impacts due to habitat disturbance and a temporary increase in stress and mortality of aquatic organisms during pipeline installation through waterbodies and wetlands. Impacts would be reduced with the implementation of permitting mitigation requirements. The use of trucking and/or rail to transport oil during construction would have short- to long-term, minor to moderate impacts on aquatic resources should a crude oil release occur. Operational impacts due to an inadvertent release of crude oil from the pipeline would be comparable to those described for Alternatives 3 and 4. Overall, the combined impacts from Alternatives 1 and 5 on aquatic resources would be significant given the intensity and duration of impacts from Alternative 1.

ES.3.5.3. Federally Protected Wildlife Species

Federally protected species that have been documented in the affected area include piping plover (*Charadrius melodus*), northern long-eared bat (*Myotis septentrionalis*), bald eagle (*Haliaeetus leucocephalus*), and golden eagle (*Aquila chrysaetos*). Designated piping plover critical habitat occurs in the affected area on sandbars in, and adjacent to, Lake Oahe. The interior least tern (*Sternula antillarum athalaso*) has been observed within the affected area, although it is no longer listed under the Endangered Species Act (ESA). Federally protected species likely to occur within the affected area based on the presence of suitable habitat and include rufa red knot (*Calidris canutus rufa*) and whooping crane

(*Grus americana*). The bald eagle and golden eagle are protected under the Bald and Golden Eagle Protection Act, which prohibits the take, possession, exchange, or transport of any bald or golden eagle unless allowed by permit. The USACE underwent informal consultation with the USFWS based on documented occurrences of the northern long-eared bat and piping plover. USACE is reinitiating informal consultation with the USFWS based on recent changes to the listing of northern long-eared bat from threatened to endangered. Recent surveys performed by the SRST did not identify any suitable Dakota skipper (*Hesperia dacotae*) habitat within the Project Area. The selection of an alternative with the potential for adverse effects on a federally listed species or designated critical habitat could require additional consultation.

If the easement is not granted and the pipeline is abandoned at the Lake Oahe crossing under Alternative 1, impacts on federally listed species, designated critical habitat, and bald and golden eagles from abandonment activities would occur. Alternative 1 would have short- to long-term, major impacts on piping plover and piping plover critical habitat due to habitat loss or degradation during removal activities. Disturbance, injury, and mortality of individuals caused by dredging activities and spoil storage in and adjacent to Lake Oahe would impact the aforementioned species. Impacts would be significant and would be *likely to adversely affect* these species and critical habitat. Long-term minor impacts on the rufa red knot and whooping crane would occur due to noise disturbance and displacement during removal activities, which would result in a *may affect, not likely to adversely affect* determination, as the impacted species would be expected to move on from the affected area along the associated migratory routes. The same noise disturbance and displacement would also affect the northern long-eared bat, although impacts would be long-term and minor to moderate given the potentially limited available habitat in the area. Impacts would result in a *may affect, not likely to adversely affect* determination on the northern long-eared bat. Widespread habitat disturbance and loss of milkweed host plants would result in short-term to long-term moderate impacts on the monarch butterfly (*Danaus plexippus*). Impacts would result in a *may affect and is likely to adversely affect* determination on the monarch butterfly. Bald and golden eagles would experience a long-term reduction in available aquatic prey at the crossing location due to displacement or mortality; however, impacts would be negligible given the abundant prey in adjacent areas.

Alternative 2 would be less likely to affect federally protected species given the limited activities required for abandonment. Temporary, minor impacts on the piping plover, rufa red knot, whooping crane, monarch butterfly, and northern long-eared bat would occur due to disturbance from lighting and noise. Given the minor, temporary impacts on these species, impacts would not be significant, resulting in a *may affect, not likely to adversely affect* determination for the listed species.

Granting the easement under Alternatives 3 and 4 would result in no additional construction impacts and no impacts on federally listed species or bald and golden eagles from routine operation and maintenance of the buried pipeline. In the event of a WCD crude oil release at the Lake Oahe crossing, short- to long-term major downstream impacts would occur on pallid sturgeon due to habitat contamination, injury, and mortality. Temporary to short-term moderate to major impacts would occur on piping plover and piping plover critical habitat due to contamination and behavioral disturbances. Meanwhile, short-term minor to moderate impacts would occur on rufa red knot, whooping crane, and northern long-eared bat due to disturbance, displacement, and contaminated food and water sources. However, with the remote to very unlikely occurrence, impacts from a Lake Oahe crossing crude oil release are considered

discountable under the ESA, which would result in a *may affect, not likely to adversely affect* determination to these federally listed species. Therefore, these alternatives would not be expected to have significant impacts. Similarly, a WCD crude oil release would have temporary to long-term, and minor to major, non-significant impacts on bald and golden eagles due to disturbance, displacement, and contaminated food and water sources. Further, Alternative 4 includes an additional easement condition requiring Dakota Access to conform to the *National Bald Eagle Management Guidelines* (USFWS, 2007) and minimize off-road vehicle traffic in the event of any required remediation activities.

Under Alternative 5, impacts from the abandonment of the existing pipeline would have short-term, major impacts on Dakota skipper and monarch butterfly based on known occurrences of these species as a result of mortality caused from trenching, habitat disturbance, vegetation clearing, and soil compaction or incidental releases of hazardous substances. These impacts would be *likely to adversely affect* these species and result in significant impacts. Tree removal would affect suitable habitat for the northern long-eared bat, bald eagle, and golden eagle. Operational impacts due to an inadvertent release of crude oil from the Lake Oahe crossing would be comparable to those described for Alternatives 3 and 4, with temporary to long-term minor to major impacts and a very unlikely potential of occurrence, resulting in non-significant impacts. Alternative 5 impacts on piping plover, piping plover critical habitat, northern long-eared bat, and rufa red knot would be non-significant and result in a *may affect, not likely to adversely affect* determination. Impacts on bald and golden eagles would be mitigated with adherence to the USFWS National Bald Eagle Management Guidelines. As there would be no impacts on Dakota skipper from Alternatives 1 and 2, the combined construction operation impacts with Alternative 5 would be unchanged and would still be significant. Because of the extensive construction impacts associated with Alternative 1, the combined construction and operational impacts on piping plover and piping plover critical habitat for Alternatives 5 and 1 would be significant.

ES.3.6. LAND USE AND RECREATION

ES.3.6.1. Land Ownership and Land Use

If the easement is not granted and the pipeline is abandoned by removal at the Lake Oahe crossing under Alternative 1, this would have long-term moderate impacts on land ownership due to the establishment of approximately 1,477 acres of temporary construction easements on private and federal property adjacent to the Lake Oahe crossing. This would limit the activities landowners could perform during abandonment by removal activities; however, land ownership would return to normal following construction, and impacts would not be significant. Impacts on land use and disruptions to grazing would be short- to long-term, major, and significant. Alternative 2 would not have these same impacts because the pipeline would be abandoned in place.

The unlikely occurrence of an unanticipated release of crude oil adjacent to or beneath Lake Oahe under Alternatives 3 or 4 would result in a negligible risk on land ownership and a negligible to moderate risk on land use as a result of the need to obtain temporary easements to conduct oil remediation activities and disruptions in grazing and irrigation, which would not be significant. Affected lands may include private, state, federal, and tribal property. Following remediation, land ownership and land use would return to normal.

Under Alternative 5, impacts from construction and abandonment activities would have permanent, moderate impacts on land ownership due to the need for new pipeline easements across state and private property for the reroute, but not significant. The combined impacts from Alternatives 1 and 5 or Alternatives 2 and 5 on land ownership would not be significant. The combined impacts from Alternatives 1 and 5 on land use would be significant given the intensity and duration of impacts from Alternative 1, while the combined impacts from Alternatives 2 and 5 would not be significant.

ES.3.6.2. Recreation and Special Interest Areas

Lake Oahe and its shoreline are open to the public for passive recreational activities including fishing, swimming, sightseeing, bird watching, camping, and picnicking. Other recreation and special interest areas include the Cannonball South Area along the Cannonball River at the junction with Lake Oahe, and the Fort Yates and Walker Bottom Recreation Areas, both of which are managed by the SRST and occur south of the Project Area along Lake Oahe.

If the easement is not granted and the pipeline is abandoned at the Lake Oahe crossing under Alternative 1, impacts on recreation from abandonment activities would occur. Alternative 1 would have long-term, moderate impacts on recreation from disruptions to boating and recreational activities as well as hunting and wildlife viewing on Lake Oahe. A relatively small amount of Lake Oahe would be affected; therefore, impacts would not be considered significant. Alternative 2 would not have these same impacts because the pipeline would be abandoned in place.

Alternatives 3 and 4 would result in short-term, moderate to major impacts as a result of a disruption to recreational activities associated with Lake Oahe in the event that a WCD crude oil release occurs. The likelihood of a WCD crude oil release is remote to very unlikely, and thus impacts would not be significant.

Under Alternative 5, the North Bismarck Reroute is close to or crosses multiple conservation easements / habitat management areas, National Wildlife Refuges, state trust lands, waterfowl production areas, and private tribal lands. Impacts from construction and abandonment activities would have temporary, moderate impacts on recreation due to disruptions to recreational activities. Operational impacts due to an inadvertent release of crude oil from the pipeline would affect activities in adjacent recreational areas, although this would have a remote to very unlikely potential of occurrence.

ES.3.7. CULTURAL RESOURCES

There are no known historic properties in the area of potential effects. If cultural resources should be found during Project activities for any of the five alternatives, mitigation measures would be implemented to avoid or minimize impacts according to Dakota Access's plan for addressing unanticipated discoveries of cultural resources or human remains.

ES.3.8. SOCIOECONOMICS, ENVIRONMENTAL JUSTICE, AND HEALTH

ES.3.8.1. Socioeconomics

Impacts on socioeconomics from abandonment activities would occur under Alternatives 1 or 2.

Alternative 1 would have long-term, negligible, beneficial impacts on the economy and local housing from the employment of a temporary workforce consisting of about 750 jobs and 2,200 indirect jobs.

Conversely, the shutdown of the pipeline would have long-term to permanent, major adverse impacts on the economy due to the loss of about 600 to 700 jobs, and a decrease in state tax revenue of

approximately \$187 million over 2 years (according to State of North Dakota estimates based on the July 1, 2023, through June 30, 2025, budget period). This loss would represent a 5 percent reduction in state oil and gas tax revenues during that period. Overall, the net impact would be significant and adverse.

Alternative 1 would also have an indirect effect on tribal oil and gas extraction. The Mandan, Hidatsa, and Arikara (MHA) Nation estimates revenue loss that would exceed \$160,000,000 over a 1-year period.

Alternative 2 would have similar although lesser beneficial impacts on the economy from the employment of a temporary workforce as Alternative 1, countered by the same long-term to permanent, major, adverse impacts on the economy. The net impact would be significant and adverse.

Under Alternatives 3 and 4, Project operations would have a permanent, major, significant, beneficial economic impact from employment and tax revenues to the State of North Dakota and Morton and Emmons counties. Temporary, major economic impacts would occur to recreation and agricultural water intakes in the event of a WCD crude oil release adjacent to or under Lake Oahe; however, given that the likelihood of a WCD crude oil release at the Lake Oahe crossing is remote to very unlikely, the socioeconomic risk is minor to moderate.

Under Alternative 5, construction of the North Bismarck Reroute and abandonment of about 100 miles of the existing pipeline would result in temporary beneficial impacts on the economy due to the employment of a temporary workforce consisting of about 1,050 temporary jobs and 4,200 temporary indirect jobs.

Operation would have a permanent, beneficial economic impact through net gain in ad valorem taxes for more counties, including Emmons, Oliver, Burleigh, Mercer, and Morton counties, although Mercer and Morton counties would experience a tax decrease. These generally beneficial effects would be countered by short-term, mild to moderate, adverse impacts caused respectively by increased demands on medical and emergency services, and increased costs to farmers associated with the shipping of agricultural products due to an increase associated with oil during construction. The State of North Dakota also expects that trucking and rail would be unable to accommodate the entire capacity of DAPL, leading to oil rig closures. This would result in a revenue loss for North Dakota's oil producers and the State, and thereby would result in a significant, moderate, adverse impact. The overall combined impacts on socioeconomics from Alternatives 1 and 5 or Alternatives 2 and 5 would be significant and adverse.

ES.3.8.2. Environmental Justice

Environmental justice and the impact of the Project on Tribes, particularly SRST, is a primary area of interest for the public and Tribes. This EIS substantially expands the Environmental Justice analysis from the 2016 EA to include the SRST and the CRST as identified environmental justice communities.

Throughout the development of this EIS, the USACE consulted to obtain input and insight from Tribes through invitations to act as cooperating agencies, engage in government-to-government consultation, and participate in Tribe-specific scoping meetings. A deeper analysis of effects to Tribal water rights and subsistence rights is included.

For Tribal Nations, the Missouri River is characterized as “The Water of Life,” and the very water that created the corridor is considered sacred. When the USACE built six main-stem dams on the Missouri River, life for the Indigenous Peoples who called the river home changed immediately and dramatically. This has been problematic for Tribes and Tribal Peoples who see these resources holistically.

The United States has a unique legal relationship with Indian tribal governments as set forth in the Constitution of the United States, treaties, statutes, Executive Orders, and court decisions. The federal government has enacted numerous statutes and promulgated numerous regulations that establish and define a trust relationship with Tribal Nations. The USACE recognizes these trust relationships/responsibilities and will continue to work with Indian Tribes on a government-to-government basis to fulfill all federal responsibilities.

Abandonment by removal activities associated with Alternative 1, which involves the removal of the pipe from under Lake Oahe, would have short- to long-term, moderate impacts on the availability of subsistence resources at the crossing location and downstream due to habitat disturbance, and wildlife and fish injury or mortality caused by dredging or excavation activities. This would subsequently result in a short- to long-term, moderate impact on treaty rights and environmental justice communities. Impacts would be significant. Alternative 2 would not have these same impacts because the pipeline would be abandoned in place.

In the event that a WCD crude oil release occurs adjacent to or under Lake Oahe under Alternatives 3 or 4, short- to long-term, major impacts on the disturbance of wildlife from routine operation and on the availability of subsistence resources (e.g., game species) would occur at the crossing location and downstream. As a result, a short- to long-term, moderate impact on subsistence and treaty rights would occur, which include the right to practice subsistence harvesting. As the potential for a crude oil release is considered remote to very unlikely, these alternatives are not expected to have significant impacts.

To further reduce the risk of a crude oil release, Alternative 4 includes additional new easement conditions for Dakota Access to:

- Implement improved leak detection systems for the crossing as new technology becomes available, and implement frequent drills and simulations for emergency response and preparedness with potentially affected communities in the event of a release incident;
- Develop a plan for food distribution to environmental justice communities that rely on traditional subsistence resources and require provision of supplemental food according to the plan in the event of a crude oil release from DAPL at the crossing that affects food supplies; and
- Coordinate with the SRST and the CRST to undertake systematic subsistence studies.

Under Alternative 5, construction and operation of the North Bismarck Reroute, abandonment of about 100 miles of the existing pipeline, and short-term use of truck and rail to transport oil during construction would result in temporary to long-term, negligible to moderate impacts on subsistence resources and

treaty rights. However, as most of the reroute would occur on private land where access is limited, impacts would not be significant. Overall, the combined impacts from Alternatives 1 and 5 on environmental justice, treaty rights, and subsistence would be significant given the intensity and duration of impacts from Alternative 1. Additionally, relocating the existing pipeline north of Bismarck within an uncontrolled section of the river would only marginally reduce impacts on the Standing Rock residents, as a WCD release would likely reach Lake Oahe. Additional risk would potentially be imposed on the Native American populations of Bismarck-Mandan under Alternative 5, while also affecting SRST and CRST individuals who use northern portions of Lake Oahe for subsistence practices.

ES.3.8.3. Health

Abandonment by removal activities associated with Alternative 1 would have short- to long-term, major impacts on the health of community members due to the potential reduced nutritional intake from the lower availability of subsistence resources at the crossing location, in addition to minor impacts associated with increased road traffic, which could increase the risk of vehicular accidents. As such, the impacts on food acquisition and nutritional intake could be significant. There would be no operational impacts on health under Alternative 2 as the pipeline would be abandoned in place and cease to operate.

Alternative 1 would also have indirect effects on tribal oil and gas extraction. The MHA Nation commented that the Tribe would lose millions of dollars in tax and royalty revenue while oil is not flowing through the pipeline, which transports a large percentage of the MHA Nation's oil production to market. This loss would considerably reduce the funding that the MHA Nation allocates for programs such as drug enforcement, health clinics, health insurance, child and elder care services, and emergency management centers. Alternative 1 would result in adverse economic impacts on the MHA Nation's health programs. The overall economic impacts on the MHA Nation's tribal health programs under Alternative 2 would be same for Alternative 1.

Granting the easement under Alternatives 3 and 4 would result in no additional construction impacts, and no impacts from routine operation and maintenance of the buried pipeline would occur. However, if a WCD crude oil release occurs adjacent to or beneath Lake Oahe, the potential effects resulting from the ingestion of contaminated fish and/or water or from accidents/injuries to first responders during remediation activities would result in short- to long-term, minor to major impacts on the health of community members. Increased road traffic could also increase the risk of vehicular accidents.

As discussed above, to reduce potential health impacts from ingesting contaminated fish, Alternative 4 includes a new easement condition that Dakota Access develop a contaminated fish testing plan in the event of a crude oil release.

Alternative 5 would result in temporary to long-term, minor to moderate impacts on health due to pollutant emissions affecting air quality, the increased risk of vehicular accidents due to construction traffic, potential injury and mortality of workers, and the potential of a crude oil release during truck and rail transport or pipeline operation. However, based on risk levels and/or impact intensity, the construction and operation of the North Bismarck Reroute would not have significant impacts on health. Overall, the combined impacts from Alternatives 1 and 5 on health would be significant given the intensity and duration of impacts from Alternative 1.

The impacts transitioning to truck and/or rail transport of oil on the MHA Nation while the North Bismarck Reroute is permitted and constructed would result in short-term, adverse impacts on the tribal economy, including health programs.

ES.3.9. TRANSPORTATION AND TRAFFIC

Transportation and traffic impacts for the Project primarily involve ND Highway 1806 on the west side of Lake Oahe, ND Highway 1804 on the east side of Lake Oahe, and Lake Oahe itself (for boat traffic).

Operation of the pipeline would have a permanent moderate beneficial impact by eliminating the need for tanker trucks and trains to transport the crude oil through Morton County, avoiding the associated wear and tear and increased traffic on public roads and rail, and limiting the number of traffic-related fatalities (NDDOT, 2019). In the event of a crude oil release in or adjacent to Lake Oahe, local and regional vehicle traffic would experience temporary to short-term, minor to moderate impacts due to increased traffic, traffic restrictions, and traffic closures to support remediation activities along the lake as a result of Alternatives 3 and 4. Boating traffic would experience temporary to short-term, moderate to major impacts as a result of closures during remediation efforts. However, as the potential for a crude oil release is considered remote to very unlikely, these alternatives are not expected to have significant impacts.

Under Alternative 5, impacts from the construction of the North Bismarck Reroute would be expected to have short-term, minor impacts on local traffic due to lane and road closures for road improvements and construction. The use of trucking and/or rail to transport oil during construction could result in a greater number of smaller crude oil releases. For hazardous liquid transportation, the number of incidents resulting in serious injuries or fatalities is greater for truck or rail than pipeline (per volume transported) (Furchtgott-Roth and Green, 2013; PHMSA, 2018). The rate of all incidents resulting in a release of crude oil is also greater for truck and rail transportation; for pipelines, an incident occurred approximately once every 720 million gallons of crude oil shipped, as compared to once every 50 million gallons shipped by rail and once every 55 million gallons shipped by truck (PHMSA, 2018). The use of trucks and trains during construction would have a short-term, minor to moderate impact on rail transportation corridors and a short-term, moderate impact on road transportation in North Dakota due to increased traffic.

ES.3.10. AIR QUALITY

Alternative 1 would have a long-term, moderate, non-significant impact on local air quality associated with vehicle emissions.

Granting the easement under Alternatives 3 and 4 would result in no additional construction impacts on air quality. However, eligible intermittent adverse impacts on local air quality from routine maintenance activities would be expected to occur. Should a crude oil release occur adjacent to or under Lake Oahe, temporary minor impacts would occur on local air quality due to vaporization of crude oil resulting in volatile organic compound (VOC) and hazardous air pollutant (HAP) emissions, and from vehicle emissions associated with cleanup activities.

In the event of a crude oil release, air emissions would occur associated with the vaporization of the crude oil and cleanup activities, and impacts would be similar to those discussed above for Alternatives 3 and 4.

ES.3.11. CLIMATE CHANGE

Emissions of greenhouse gases (GHGs) contribute to climate change. If the easement is not granted and the pipeline is abandoned at the Lake Oahe crossing under Alternatives 1 or 2, GHG emissions from abandonment activities would occur. Considering the scope of construction work associated with Alternative 1, the amount of direct GHG emissions associated with Alternative 1 would likely be considerably larger than the GHG emissions associated with the original pipeline construction and occur over a period of 6 to 20 years or more. Although no GHG emissions would occur from operations under Alternative 1, the generation of GHG emissions from vehicles and equipment associated with abandonment activities would be long-term.

The limited scope of abandonment activities under Alternative 2 would result in the temporary generation of GHG emissions, which are likely smaller than the GHG emissions associated with the original pipeline construction. Because the pipeline would be abandoned, Alternative 2 would eliminate a small amount of operational GHG emissions associated with pipeline maintenance; however, because these emissions are negligible, abandonment would not result in any changes to climate change impacts associated with the Project.

Normal operation of the pipeline under Alternatives 3 and 4 across Lake Oahe would not generate any direct GHG emissions, with the exception of a minor amount of emissions associated with pipeline maintenance activities. Should a crude oil release occur under Alternatives 3 and 4, adjacent to or under Lake Oahe, temporary vehicle GHG emissions would occur during remediation activities.

GHG emissions would also increase under Alternative 5 because, even under the best-case scenario, rail and truck transportation would need to serve as an alternative to the DAPL Project during the construction of the North Bismarck Reroute.

Currently, there is no universally accepted methodology to attribute discrete, quantifiable, physical effects on the environment from the Project's incremental contribution of GHGs emissions to assess significance. Given limitations on the ability to determine localized or regional impacts from GHG emissions from the Project or the ability to determine the presence and extent of resource impacts, this EIS provides a general description of the observed environmental impacts attributed to climate change in the Project region, the scope of anticipated GHG emissions for each alternative, and the social costs of GHG emissions from past construction of the Project and operating downstream emissions. The EIS analysis includes the climate change impacts of construction activities, normal pipeline operations, oil release scenarios, and alternative oil transport methods (i.e., rail or truck). The EIS provides an estimate of the downstream GHG emissions from refining and consumption of oil transported by the pipeline. The EIS also explains that downstream refining and consumption of oil would also occur without the Project, although the amount of refining and consumption could be reduced due to the market effects of increased costs of transportation, changes to supply, or regulatory dynamics from domestic and international decarbonization efforts.

ES.3.12. CUMULATIVE IMPACTS

ES.3.12.1. Geology and Soils

Actions within the geographic scope that could potentially impact geology and soils include both livestock grazing and the DAPL Project and would only result in cumulative impacts associated with Alternatives 1, 2, and 5.

If the easement is not granted and the pipeline is abandoned under Alternatives 1 and 2, cumulative impacts would occur as the result of abandonment construction activities combined with any past effects from the DAPL Project. Impacts on geology and soils from Alternative 1 would be significant, and additional further contributions to those impacts from crop cultivation and livestock grazing would be minor. Ground disturbance under Alternative 2 would be minor; therefore, cumulative effects from the DAPL Project, crop cultivation, and livestock grazing are not expected to result in significant impacts. Similarly, abandonment activities under Alternative 5 along other portions of the DAPL Project within the same Hydrologic Unit Code (HUC-12) watershed would result in minor ground disturbance. Any resulting cumulative impacts from previous DAPL Project construction would be temporary to short-term and minor.

ES.3.12.2. Water Resources

Actions within the geographic scope that could contribute to impacts on water resources include the DAPL Project, crop cultivation, and livestock grazing. Cumulative impacts were identified for surface water and wetlands.

If the easement is not granted and the pipeline is abandoned at the Lake Oahe crossing under Alternative 1, cumulative impacts could occur as the result of abandonment activities in addition to potential future stormwater runoff from ground disturbance associated with crop cultivation and cattle grazing. Impacts on water resources from Alternative 1 would already be significant, and potential future contributions from crop cultivation and livestock grazing to those impacts would be minor. Potential ground disturbance resulting in stormwater runoff under Alternative 2 would be minor, and the cumulative effects from crop cultivation and livestock grazing would not result in significant impacts.

No actions were identified that would contribute to cumulative impacts on water resource impacts with Alternatives 3, 4, and 5 within the geographic and temporal scope of this analysis.

ES.3.12.3. Wildlife and Aquatic Resources

Actions within the geographic scope that could contribute to impacts on wildlife and aquatic resources include the DAPL Project.

ES.3.12.3.1. Wildlife

Granting the easement under Alternatives 3 and 4 would result in no additional cumulative impacts from construction. Since the construction areas have been restored, no cumulative impacts are anticipated as a result of routine operation and maintenance of the buried pipeline.

No actions were identified that would contribute to future cumulative impacts on wildlife with Alternatives 1 through 5 within the geographic and temporal scope of this analysis.

ES.3.12.3.2. Aquatic Resources

If the easement is not granted and the pipeline is abandoned at the Lake Oahe crossing under Alternative 1, cumulative impacts could occur as the result of abandonment activities along with potential future stormwater runoff from crop cultivation and livestock grazing. However, impacts on aquatic resources from Alternative 1 would already be significant, and potential contributions from the crop cultivation and livestock grazing to those impacts would be minor. Ground disturbance under Alternative 2 would be minor, and any cumulative effects from crop cultivation and livestock grazing are not expected to result in significant impacts.

Granting the easement under Alternatives 3 and 4 would result in no additional cumulative construction impacts on aquatic resources. Since soils have been stabilized in the years following construction, no cumulative impacts are anticipated as a result of routine operation and maintenance of the buried pipeline. Therefore, cumulative impacts under Alternatives 3 and 4 would not be significant.

No actions were identified that would contribute to future cumulative impacts on aquatic resources with Alternatives 3, 4, and 5 within the geographic and temporal scope of this analysis.

ES.3.12.3.3. Threatened and Endangered Species

If the easement is not granted and the pipeline abandoned at the Lake Oahe crossing under Alternative 1, minor cumulative impacts would occur on the northern long-eared bat as the result of abandonment activities that would increase sedimentation and turbidity in Lake Oahe, causing a reduction in prey abundance. The limited ground disturbance under Alternative 2 could result in minor cumulative impacts that would not be significant.

No actions were identified that would contribute to future cumulative impacts with Alternatives 3 and 4. Since habitat has been restored in the years following construction and weed control measures implemented, no cumulative impacts are anticipated as a result of routine operation and maintenance of the buried pipeline. Therefore, cumulative impacts on federally listed species under Alternatives 3 and 4 would not be significant.

Under Alternative 5, abandonment of a portion of the DAPL Project would have adverse effects on Dakota skipper, which would create a cumulative impact on the species along with adverse effects from the DAPL Project construction in Dunn, McKenzie, and Mountrail counties. However, as affected populations have likely recovered from any impacts during the DAPL Project construction, cumulative impacts would be negligible. Therefore, Alternative 5 would have no significant cumulative impacts on federally listed species. The combined cumulative impacts of Alternative 1 and 5 or Alternatives 2 and 5 would not be significant.

ES.3.12.4. Cultural Resources

Actions that would contribute to cumulative impacts on cultural resources include the DAPL Project. Construction of the Project had no impact on historic properties or cultural resources and therefore did not

contribute to cumulative impacts. No actions were identified that would contribute to future cumulative impacts on cultural resources for Alternatives 1 through 5 within the geographic and temporal scope of this analysis.

ES.3.12.5. Socioeconomics, Environmental Justice, and Health

Actions within the geographic scope that could contribute to cumulative impacts include the DAPL Project, DAPL Optimization Project, Emmons-Logan Wind Project, Emmons-Logan Transmission Line, Montana-Dakota Utilities Co. Mandan to Ellendale Upgrade Project (electric transmission line), and Oliver III Wind Energy Center.

ES.3.12.5.1. Socioeconomics

If the easement is not granted at the Lake Oahe crossing under Alternatives 1 and 2, cumulative impacts could occur as the result of pipeline abandonment. Alternatives 1 and 2 would contribute to cumulative beneficial impacts with other actions through the creation of both long-term and temporary jobs, increased local and state hospitality, and tax revenues during the abandonment process. Conversely, ceasing operation would result in an adverse impact on the economy through lost revenue and jobs. Given the positive economic impacts associated with the actions listed above, there would be no negative cumulative impacts on the economy, and long-term and temporary minor beneficial cumulative impacts under Alternatives 1 and 2. Cumulative impacts would not be significant.

Granting the easement under Alternatives 3 and 4 would result in no additional cumulative impacts from construction on socioeconomics. Future significant cumulative beneficial local impacts are anticipated to occur from increased and sustained employment and tax revenue. Therefore, cumulative impacts under Alternatives 3 and 4 combined with the actions above would be beneficial and significant.

Construction and operation of the North Bismarck Reroute under Alternative 5 would contribute to cumulative beneficial impacts on the economy due to tax revenue and employment along with the operation of the actions listed above. Similar to Alternative 3 and 4, impacts would be significant. The combined cumulative impacts for Alternatives 1 and 5 and Alternatives 2 and 5 would be beneficial and significant.

ES.3.12.5.2. Environmental Justice, Treaty Rights, Subsistence, and Health

Cumulative impacts related to environmental justice as a result of the Project, combined with the actions described above, are unknown as environmental justice reviews were not identified in the publicly available information associated with any of the above actions.

As the actions are primarily located on private land where subsistence resources are less accessible, potential cumulative adverse effects on treaty rights and subsistence due to the temporary dispersal or unavailability of subsistence resources during construction would be negligible and not significant.

Past temporary, minor cumulative impacts on health from the above actions and the Project could have occurred as a result of accidents and injuries during construction. No actions have been identified that would contribute to future cumulative impacts on health due to accidents and injuries or other causes for Alternatives 1 through 5 within the geographic and temporal scope of this analysis.

ES.4. REFERENCES

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