Draft Programmatic Environmental Assessment

Improvement of Utility Systems in the State of North Dakota

State of North Dakota

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FEMA

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Acronyms and Abbreviations

APE	Area of Potential Effects
BGEPA	Bald and Golden Eagle Protection Act
BMP	best management practice
CAA	Clean Air Act
CATEX	categorical exclusion
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CWA	Clean Water Act
DEQ	North Dakota Department of Environmental Quality
EJ	Environmental justice
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FFRMS	Federal Flood Risk Management Standard
FPPA	Farmland Protection Policy Act
GHG	Greenhouse Gases
HMA	Hazard Mitigation Assistance
MBTA	Migratory Bird Treaty Act
NAAQS	National Ambient Air Quality Standards
NDDOT	North Dakota Department of Transportation
NDGF	North Dakota Game and Fish Department
NEPA	National Environmental Policy Act

NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
PEA	Programmatic Environmental Assessment
PM	particulate matter
PR&G	Principles, Requirements, and Guidelines
ROW	right-of-way
SEA	supplemental environmental assessment
SHPO	State Historic Preservation Officer
SWPPP	Stormwater Pollution Prevention Plan
THPO	Tribal Historic Preservation Officer
TMDL	Total Maximum Daily Loads
USACE	U.S. Army Corps of Engineers
USDOT	U.S. Department of Transportation
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service

SECTION 1. Introduction

The mission of the Federal Emergency Management Agency (FEMA) is to help people before, during, and after disasters. FEMA programs strive "to reduce the loss of life and property and protect the nation from all hazards, by leading and supporting the nation in a risk-based, comprehensive emergency management system of preparedness, protection, response, recovery, and mitigation" (FEMA 2024a). An important component of FEMA's mission is disaster resilience, which includes funding for activities that help communities reduce the future impacts of natural disasters on life and property.

Utility projects that restore function and mitigate impacts from severe weather, flooding, drought, wildfire, and other natural hazards may be funded under FEMA's Hazard Mitigation Assistance (HMA) programs, as authorized by the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended, 42 U.S.C. §§ 5121–5207. A utility is defined here as an infrastructure system supplying a community with electricity, natural gas, water (potable and waste), or sewer (sanitary and storm) services. HMA offers multiple funding programs, including the Hazard Mitigation Grant Program, the Flood Mitigation Assistance Program, Pre-Disaster Mitigation Program, and the Building Resilient Infrastructure and Communities Program. The requirements for hazard mitigation activities are described in the *HMA Program and Policy Guide* (FEMA 2024b).

The purpose of this programmatic environmental assessment (PEA) is to identify, at a programmatic level, the potential adverse and beneficial effects associated with certain utility projects in the State of North Dakota. This PEA captures and builds upon FEMA's knowledge and experience—via prior environmental planning and historic preservation reviews—to evaluate the potential effects of FEMA funding for eligible utility improvement hazard mitigation projects. Some projects or classes of activities may continue to require full project-specific National Environmental Policy Act (NEPA) compliance reviews. Users of this PEA should note that FEMA grant programs are subject to change and this PEA would potentially cover changes in eligibility and programs.

FEMA prepared this PEA in accordance with NEPA, the Council on Environmental Quality (CEQ) regulations to implement NEPA (40 Code of Federal Regulations [CFR] Parts 1500–1508), and FEMA guidance for implementing NEPA (U.S. Department of Homeland Security Instruction 023-01-001 and FEMA Instruction 108-01-1). FEMA is required to consider potential environmental impacts before funding or approving actions and projects. The purpose of the PEA is to analyze the potential environmental impacts of the proposed activities and alternatives, including a No Action Alternative.

1.1. Background

Geography, climate, and demographic trends have necessitated development of a complex infrastructure of utility systems across North Dakota. Aging infrastructure, the need for increased resilience, and damage due to natural disasters all have the potential to limit the ability of these utility systems to function safely. Failure of these systems can cause injury and loss of life; loss of access for residents, government entities, and businesses to services and critical infrastructure; and

the occurrence of significant environmental impacts. Local governments may be unable to provide critical services, including fire suppression, emergency communication, power generation, potable water, and wastewater treatment. In an effort to restore these services and/or mitigate these impacts, FEMA may fund utility system installation, restoration, replacement, upgrade, expansion, redesign, or relocation.

1.2. Study Area for this Programmatic Environmental Assessment

The area of analysis for this PEA encompasses the State of North Dakota, as well as any tribal lands within the boundaries of the state (**Figure 1-1** and **Figure 1-2**). To limit the extent of the study area, this PEA only covers utility improvement projects with the primary purpose of addressing future losses from natural hazards through the construction of resilient facilities. These projects are usually linear and typically occur within an existing right-of-way (ROW) or utility easement, near and connected to existing utility systems, and within previously disturbed areas. However, some projects may include construction within new and undisturbed ROWs or utility easements. FEMA assistance is generally limited to nonfederal and tribal lands in areas eligible for funding under FEMA's HMA programs.

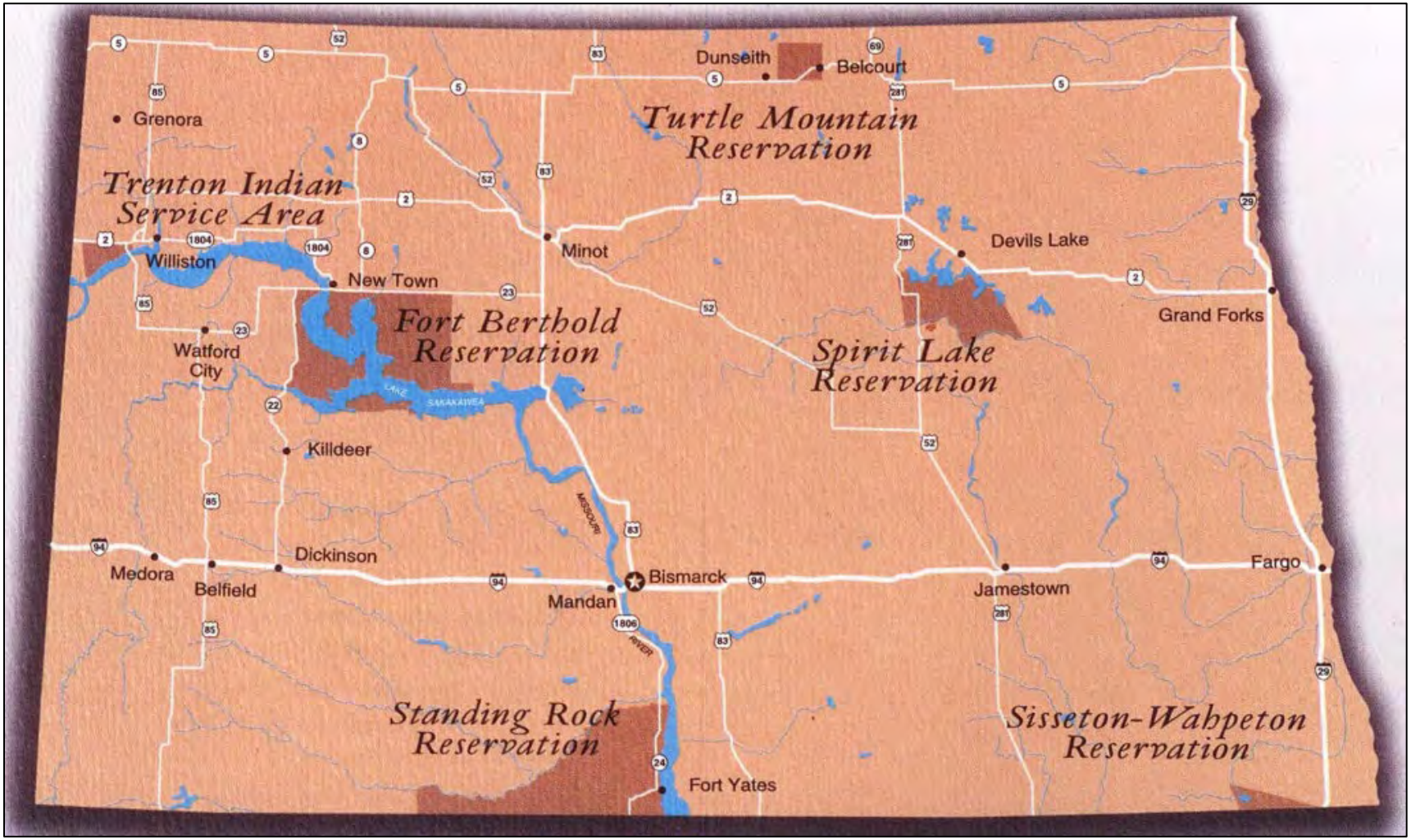
1.3. Process for Using this Programmatic Environmental Assessment

The CEQ regulations at 40 CFR §§ 1500.4(h) and 1501.11 encourage the development of program-level NEPA environmental documents and tiering from those programmatic documents to streamline repetitive background information and allow for site-specific reviews focused on a narrower scope specific to the subsequent action. A PEA addresses a group of projects that are similar in scope, scale, magnitude, and nature of impact. In addition, CEQ regulations at 40 CFR § 1501.5 allow agencies to prepare an environmental assessment for any action at any time to assist agency planning and decision-making. FEMA developed this PEA under these CEQ authorities. Consistent with the 2024 NEPA Implementing Regulations Revisions Phase 2, if actions that may fall within the scope of this PEA are considered beyond the 5-year anniversary of the Finding of No Significant Impact, then the PEA's analysis and underlying assumptions must be reevaluated to ensure they are still valid for the actions under review (40 CFR § 1501.11(c)).

For a project to qualify under this PEA, the scope of the project and the nature of impact must be evaluated within this PEA. A finding that the project conforms to the PEA must be documented using a Record of Environmental Consideration or other documentation. Additional project-specific analyses may be required if the context and intensity of a proposed project substantively differ from those described in this PEA. All projects using this PEA must undergo standard compliance procedures regarding other federal laws (e.g., Endangered Species Act [ESA], National Historic Preservation Act [NHPA], Executive Orders [EOs] for Floodplain Management, Protection of Wetlands, and Environmental Justice).

Source: World Atlas 2023

Figure 1-1. North Dakota State Map



Source: North Dakota Indian Affairs 2024

Figure 1-2. North Dakota Tribal Lands Map

Utility improvement projects that are less complex may be eligible for a categorical exclusion (CATEX) and would not require coverage under this PEA. A CATEX is a class of action that FEMA established through public review and comment that would not typically result in significant impacts, either individually or cumulatively. CATEXs commonly used for projects that involve utility work include N2 Federal Assistance for Facility Repair, N6 Federal Assistance for Relocation/Realignment of Structures and Facilities, and N7 Federal Assistance for Structure and Facility Upgrades (FEMA Instruction 108-1-1). If a specific project proposal is not included in the activities described in the action alternatives and does not fall within the parameters of a CATEX or would result in impacts or require mitigation measures not described in this PEA, then a separate NEPA evaluation would need to be conducted.

Some proposed utility improvement projects are expected to be more complicated and involve larger-scale efforts than those contemplated in this PEA. If a specific action is expected to (1) create impacts not described in this PEA, (2) create impacts greater in magnitude, extent, or duration than those described in this PEA, or (3) require mitigation measures to keep impacts below significant levels that are not described in this PEA, then a supplemental environmental assessment (SEA) would be prepared to address the specific action. The SEA would be tiered from this PEA in accordance with CEQ's NEPA-implementing regulations. Actions that require a more detailed or broader environmental review may warrant the preparation of a stand-alone EA or other applicable NEPA process.

This PEA is intended to facilitate FEMA's compliance with NEPA by providing a framework to address the potential impacts of utility improvement actions. FEMA coordinates and integrates—to the maximum extent possible—the review and compliance processes required by other federal laws and policies, such as Section 106 of the NHPA, Section 7 of the ESA, the Eight-Step Decision-Making Process of EOs 11988 (for Floodplain Management) and 11990 (for Protection of Wetlands), and others. This PEA provides a framework for integrating these requirements with NEPA compliance for utility projects.

This PEA does not cover actions where there are likely to be significant effects and for which it would be appropriate to develop an environmental impact statement. CEQ regulations (40 CFR § 1501.3(d)) provide guidance to determine whether the effects of an action could be significant, including the following:

- To determine whether the effects of the Proposed Action are significant, agencies will examine both the context of the action and the intensity of the effect. In assessing context and intensity, agencies should consider the duration of the effect. Agencies may also consider the extent to which an effect is adverse at some points in time and beneficial in others. However, agencies shall not offset an action's adverse effects with other beneficial effects to determine significance.

- Agencies should consider the characteristics of the geographic area, such as proximity to unique or sensitive resources or communities with environmental justice concerns. Depending on the scope of the action, agencies should consider the potential global,

national, regional, and local contexts as well as the duration, including short-and long-term effects.

- Agencies shall analyze the intensity of effects considering the following factors, as applicable to the Proposed Action and in relationship to one another:
    - The degree to which the action may adversely affect public health and safety.
    - The degree to which the action may adversely affect unique characteristics of the geographic area such as historic or cultural resources, parks, tribal sacred sites, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.
    - Whether the action may violate relevant federal, state, tribal, or local laws or other requirements or be inconsistent with federal, state, tribal, or local policies designed for the protection of the environment.
    - The degree to which the potential effects on the human environment are highly uncertain.
    - The degree to which the action may adversely affect resources listed or eligible for listing in the National Register of Historic Places.
    - The degree to which the action may adversely affect an endangered or threatened species or its habitat, including habitat that has been determined to be critical under the Endangered Species Act of 1973.
    - The degree to which the action may adversely affect communities with environmental justice concerns.
    - The degree to which the action may adversely affect rights of Tribal Nations that have been reserved through treaties, statutes, or EOs.

SECTION 2. Purpose and Need

The purpose of FEMA's HMA program is to promote disaster resilience by providing assistance to state, local, tribal, and territorial governments for sustainable actions that reduce or eliminate long-term risk to people and property from future disasters. Uniform and efficient provision of assistance is an essential goal of the HMA programs. Utility improvements are needed to protect life and reduce threats to property during future severe weather events, flooding, drought, wildfire, and other natural hazards. These projects would restore utilities and mitigate future losses from natural hazards through the construction of resilient facilities. Improvements are needed because aging infrastructure, the need for increased resilience, and damage due to natural hazards all have the potential to limit the ability of utility systems to function safely. Failure of these systems can cause injury and loss of life; loss of access for residents, government entities, and businesses to services and critical infrastructure; and the occurrence of significant environmental impacts.

SECTION 3. Alternatives

This section describes the No Action Alternative, the action alternatives, and alternatives that were considered but dismissed.

3.1. No Action Alternative

Under the No Action Alternative, FEMA would not undertake or fund any utility improvement mitigation action outside of existing CATEX thresholds. There could be a range of possible outcomes if FEMA does not provide funding, depending on the amount of alternative funding available and priorities established by communities and utilities. Because there is a broad range in the size and capabilities of communities within North Dakota, it is impossible to predict each community's actions, time frame, and standards by which work would be completed. Therefore, to provide a consistent basis for comparison to the Proposed Action, it is assumed, for the purposes of this PEA, that utilities would remain in their current condition (i.e., damaged utilities would not be repaired or replaced and hazards would not be mitigated), or local and state governments and private property owners might construct some non-FEMA-funded minor utility improvement projects. These projects would be properly engineered and permitted but may not provide the same level of risk reduction as the action alternatives and, because of the time needed to gather enough funding for construction, specific actions may take longer to implement under the No Action Alternative. The utilities within the project area would still be subject to the risk of failure for the planning horizon of the PEA because of the unmitigated effects of severe weather, flooding, wildfire, drought, and other natural hazards within the State of North Dakota. The No Action Alternative would not result in long-term resilience or hazard mitigation.

3.2. Action Alternatives

The following action alternatives are being considered for further evaluation in this PEA. These alternatives represent types of actions that may be implemented individually or in combination with one another. In some instances, there may be only one viable option to be implemented. Some specific items of work may include, but are not limited to, the following:

- Placement of temporary crossings, utilities, staging areas, access, and safety features.
- Restoration, installation, and relocation of production, collection, transmission, and treatment facilities needed to provide utility services in the event of a natural hazard.
- Construction, excavation, trenching, and directional boring to allow repair, replacement, relocation, or installation of utilities and ancillary facilities.
- Upsizing, encasing, armoring, and upgrading utilities to improve function and protect facilities from future events.

- Repair and reconstruction of disturbed areas, including adjacent roadway and other connected infrastructure necessary to restore function.

Utility improvement mitigation projects may include some repair to pre-disaster conditions that would normally be considered a categorical exclusion under NEPA review as a stand-alone project. However, as part of a mitigation project, repair work would be considered a connected action and would require further NEPA review that may be eligible for coverage under this PEA. The following list of alternatives may not be available in all project locations. Therefore, each project may have a different preferred alternative. The selected alternative (or combination of alternatives) would be documented in the Utilities Checklist (Appendix A).

3.2.1. ALTERNATIVE 1: REPLACEMENT

Under this alternative, existing utilities would be replaced with the same type of utility in the existing location. In some situations, leaving utilities in their existing locations may be the safest or most cost-effective option. This alternative differs from the No Action Alternative in that it includes projects such as ground stabilization and grade control; the hazard in that segment would be mitigated without relocating the utility.

Changes in materials and dimensions are included in this alternative, including changes in capacity. This may include upgrades to meet existing codes and standards as well as upgrades warranted to address conditions that have changed since the original construction. In the case of corridors that no longer serve as functional routes, bank stabilization or grade control may be needed to restore function and stability. The alternative includes any site restoration and repair of disturbed areas, such as reconstruction of existing roadway infrastructure. Included in this alternative are upgrades to current codes, standards, and construction of facilities necessary to maintain current infrastructure function. Applicable design codes would be followed for all design and construction. Utility components that are replaced would be removed and disposed of in compliance with federal, state, and local laws.

3.2.2. ALTERNATIVE 2: RELOCATION

Under this alternative, all or part of an existing utility would be relocated to a new location with a connection to the existing system. Aging infrastructure and outdated design may limit the ability of existing systems to function safely. In some locations, the current utility alignment is vulnerable to hazards, threatening public safety and the existing infrastructure. Utilities in these locations may need to be relocated to protect life safety and prevent or minimize infrastructure damage during future disaster events. Relocation of the utility would typically occur within the existing utility or transportation corridors, ROWs, easements, or otherwise previously disturbed areas. However, some projects may include the relocation of utilities within new and undisturbed ROWs or utility easements. Utility relocations would contain a beginning and end point that tie back into the existing system. Segments that are relocated would be abandoned in place or removed and disposed of in compliance with federal, state, and local laws.

Changes to materials and dimensions are included in this alternative, as are improvements needed to meet current codes, standards, and upgrades warranted to address conditions that have changed since the original construction. The alternative includes any site restoration and repair of disturbed areas, such as reconstruction of existing roadway infrastructure. These projects may also include actions such as bank stabilization or grade control as needed to mitigate hazards such as bank erosion and slope failures in a particular segment. Applicable codes and standards would be followed for all design and construction. Compliance with all other federal, tribal, state, and local laws, regulations, and EOs is required and would be evaluated on a project-specific basis.

3.2.3. ALTERNATIVE 3: INSTALLATION

Under this alternative, new utilities would typically be installed within existing utility or transportation corridors or ROWs, or otherwise previously disturbed areas. However, some projects may include the installation of utilities within new and undisturbed ROWs or utility easements. These improvements may be needed to restore or expand the design capacity of existing systems and may include detention and retention ponds that increase capacity of stormwater management utilities. These projects may also include actions such as bank stabilization or grade control needed to mitigate hazards (e.g., bank erosion or slope failures) in a particular segment. The alternative includes any site restoration and repair of disturbed areas, such as reconstruction of existing roadway infrastructure. Applicable codes and standards would be followed for all design and construction. Compliance with all other federal, tribal, state, and local laws, regulations, and EOs is required and would be evaluated on a project-specific basis.

3.2.4. ALTERNATIVE 4: COMBINATION

This alternative includes some combination of the Replacement, Relocation, and Installation alternatives. Vulnerable or damaged utilities would be replaced, relocated, or upgraded to reduce hazards and risks to system operations and functions. Individual utility segments may be left in their existing location if it is determined that No Action is the safest, most cost-effective alternative for a particular segment. New utilities may be installed with a connection to the existing system, or existing utilities may be replaced, repaired, or relocated to restore the function of the infrastructure and reduce the risk of damage in the future. The alternative includes any site restoration and repair of disturbed areas, such as reconstruction of existing roadway infrastructure. Applicable codes and standards would be followed for all design and construction. Compliance with all other federal, tribal, state, and local laws, regulations, and EOs is required and would be evaluated on a project-specific basis.

3.3. Additional Action Alternatives Considered and Dismissed

This section describes utility improvement activities considered but eliminated from evaluation within the PEA because they are either ineligible activities or activities that fall within the parameters of a CATEX.

3.3.1. ACTIVITIES WITH A PRIMARY PURPOSE NOT RELATED TO UTILITY IMPROVEMENT HAZARD MITIGATION

Utility improvement activities that do not have a primary purpose of mitigating the impacts of severe weather, flooding, drought, wildfire, and other natural hazards, and are not connected actions to a covered utility improvement project are not eligible for coverage under this PEA. For example, new utility installation intended to provide new service to a new area would not be a project eligible for coverage under this PEA.

3.3.2. ACTIVITIES INELIGIBLE FOR FEMA FUNDING

FEMA policies for the HMA programs identify the eligible and ineligible types of activities under each program. Activities that are not eligible for funding under any program are not feasible alternatives to the Proposed Action; therefore, they were not retained as alternatives for consideration under this PEA.

3.3.3. ACTIONS COVERED BY CATEGORICAL EXCLUSIONS

FEMA grant funding may be used for repairing or replacing utilities in their existing location to their existing capacity, including minor mitigation upgrades under FEMA's Public Assistance Program. These types of projects typically fall into a CATEX under NEPA and would be evaluated accordingly. Projects that are covered by a CATEX should use the CATEX for compliance with NEPA and would not need to use the PEA. Therefore, activities that would be individually covered by a CATEX are not evaluated in this PEA.

SECTION 4. Affected Environment, Potential Impacts, and Mitigation

This section describes the environment potentially affected by the alternatives, evaluates potential environmental impacts, and recommends measures to avoid or reduce those impacts. When possible, quantitative information is provided to establish potential impacts; the significance of potential impacts is based on the criteria listed in **Table 4.1**. The study area generally includes the project area and access and staging areas needed for the alternatives. If the study area for a particular resource category differs from the project area, the differences will be described in the appropriate subsection.

Table 4.1. Evaluation Criteria for Potential Impacts

Impact Scale	Criteria
None/Negligible	The resource area would not be affected, or changes or benefits would be either nondetectable or, if detected, would have effects that would be slight and local. Impacts would be well below regulatory standards, as applicable.
Minor	Changes to the resource would be measurable, although the changes would be small and localized. Impacts or benefits would be within or below regulatory standards, as applicable. Mitigation measures would reduce any potential adverse effects.
Moderate	Changes to the resource would be measurable and have either localized or regional-scale impacts/benefits. Impacts would be within or below regulatory standards, but historical conditions would be altered on a short-term basis. Mitigation measures would be necessary to reduce any potential adverse effects.
Major	Changes would be readily measurable and would have substantial consequences on a local or regional level. Impacts would exceed regulatory standards. Mitigation measures to offset the adverse effects would be required to reduce impacts, though long-term changes to the resource would be expected.

Table 4.2 establishes the criteria for determining if a Proposed Action may be covered under the FONSI for this PEA, or through a tiered SEA if unmitigated extraordinary circumstances exist. In these situations, an SEA should be prepared, focusing on the resource where the extraordinary circumstances exist. If a project is consistent with the scope and potential impacts described and would apply the mitigation measures proposed in this PEA, then no further NEPA documentation would be required. See Section 4.17, Summary of Impacts for a summary of potential effects and mitigation measures that would be required to avoid or minimize adverse effects.

Table 4.2. Thresholds for Preparing Tiered SEAs

Area of Evaluation	Action Covered by This PEA	Tiered Supplemental Environmental Assessment May Be Required
Soils and Topography	Negligible or minor impacts on soils or topography. Or Mitigation measures are used to reduce potential impacts to a minor level.	Impacts on soils and topography are moderate or major after the application of mitigation measures.
Air Quality	Short-term emissions in attainment areas would not cause air quality to go out of attainment for any National Ambient Air Quality Standards (NAAQS).	The Proposed Action would result in a new long-term major source of air pollutants that would cause an area to be out of attainment for any NAAQS.
Climate	Short-term greenhouse gas (GHG) emissions would not increase GHG to the extent that they would contribute to changes in regional climate.	The project would have a major impact on climate following an analysis of a Proposed Action's emissions based on best available science while considering the project's scale and context.
Water Quality and Water Resources	Negligible or minor impacts on water quality and would not exceed water quality standards or criteria. Localized and short-term alterations in water quality and hydrologic conditions relative to historical baseline may occur. Or Mitigation measures are used to reduce potential impacts to a minor level.	The Proposed Action would cause or contribute to existing exceedances of water quality standards on either a short-term or prolonged basis. Or The Proposed Action would require in-water work that would result in the dredging or filling of more than 1 acre of a waterbody, exceeding the typical thresholds of a Nationwide Permit, and potentially requiring an Individual Permit from the U.S. Army Corps of Engineers (USACE).
Wetlands	The Proposed Action would either have no impacts or up to minor adverse impacts on wetlands and would be covered under a Nationwide Permit from USACE. Or Mitigation measures are used to reduce potential impacts to a minor level.	The Proposed Action would require in-water work that would result in the dredging or filling of more than 1 acre of wetlands, exceeding the typical thresholds of a Nationwide Permit, and potentially requiring an Individual Permit from USACE.
Floodplains	The Proposed Action would either have no impacts or up to short-term minor adverse impacts or is not located in and does not adversely affect floodplains.	The Proposed Action would have moderate to major long-term adverse impacts on floodplains.

Area of Evaluation	Action Covered by This PEA	Tiered Supplemental Environmental Assessment May Be Required
Vegetation	Negligible or minor impacts on native species, their habitats, or the natural processes sustaining them. Population levels of native species would not be affected. Sufficient habitat would remain functional to maintain the viability of all species.	Major impact on native species, their habitats, or the natural processes sustaining them. Population numbers, population structure, genetic variability, and other demographic factors for species might have large short-term declines, with long-term population numbers significantly depressed. Loss of habitat would affect the long-term viability of native species. Or The Proposed Action causes the spread of noxious weeds resulting in major impacts. Or The Proposed Action includes the clearing of forested land with old-growth characteristics.
Fish and Wildlife Habitat	Negligible or minor impacts on native species, their habitats, or the natural processes sustaining them. Population levels of native species would not be affected. Sufficient habitat would remain functional to maintain the viability of all species.	Major impact on native species, their habitats, or the natural processes sustaining them. Population numbers, population structure, genetic variability, and other demographic factors for species might have large short-term declines, with long-term population numbers significantly depressed. Loss of habitat would affect the long-term viability of native species.
Threatened and Endangered Species	FEMA can make a “No Effect” determination. Or FEMA can make a “Not Likely to Adversely Affect” determination along with concurrence from U.S. Fish and Wildlife Service (USFWS). Or Mitigation measures are used to reduce potential impacts to a minor level or a “Not Likely to Adversely Affect” level.	FEMA determines that the Proposed Action is likely to adversely affect a listed species or will adversely modify critical habitat that cannot be resolved through consultations with the USFWS.

Area of Evaluation	Action Covered by This PEA	Tiered Supplemental Environmental Assessment May Be Required
Cultural Resources	No historic properties affected. Or FEMA can make a determination of "No Adverse Effect" with concurrence from the SHPO (State Historic Preservation Office) and/or the THPO (Tribal Historic Preservation Office).	FEMA makes an "Adverse Effect" determination that is not resolved through consultations with the SHPO, THPO, or other consulting parties.
Environmental Justice	There would be no disproportionately high and adverse environmental or health effects on low-income and/or minority populations. Or Mitigation measures are used to reduce potential impacts to a negligible level.	There would be unmitigated disproportionately high and adverse environmental and health impacts on low-income or minority populations.
Hazardous Materials	Hazardous or toxic materials or wastes would be safely and adequately managed in accordance with all applicable regulations and policies, with limited exposures or risks. There would be no short-term or long-term adverse impacts on public safety. Or Mitigation measures are used to reduce potential impacts such that there would be no short-term or long-term adverse impacts on public health and safety.	The Proposed Action would result in a net increase in the amount of hazardous or toxic materials or wastes that need to be handled, stored, used, or disposed of, resulting in unacceptable risks, the exceedance of available waste disposal capacity, or probable regulatory violation(s). Or A Phase I or Phase II Environmental Site Assessment indicates that contamination exceeding reporting levels is present and further action is warranted.
Noise	Noise levels would not exceed typical noise levels expected from equipment or vehicles, would comply with local noise ordinances, and would not adversely affect sensitive receptors. Noise generated by construction would be temporary or short-term in nature. Or Mitigation measures are used to reduce potential impacts below the levels described above.	Noise levels would exceed typical noise levels expected from equipment permanently or for a prolonged period, would not comply with local noise ordinances, or would adversely affect a sensitive receptor.

Area of Evaluation	Action Covered by This PEA	Tiered Supplemental Environmental Assessment May Be Required
Traffic and Transportation	The Proposed Action would have only negligible or minor impacts on traffic and transportation. Or Mitigation measures are used to reduce potential impacts to a minor level.	Long-term impacts on traffic and transportation would be moderate or major even with mitigation.
Public Services and Utilities	The Proposed Action would have only negligible or minor impacts on public services and utilities. Or Mitigation measures are used to reduce potential impacts to a minor level.	Long-term impacts on public services and utilities as a result of the Proposed Action may be moderate or major with mitigation.
Cumulative Impacts	No past, present, or future actions are near the project area. Or The Proposed Action in connection with past, present, or future actions would have only negligible or minor cumulative impacts. Or Mitigation measures are used to reduce the potential cumulative impacts to a minor level.	Cumulative impacts as a result of the Proposed Action in connection with past, present, or future actions may be moderate or major.

4.1. Resources Not Affected and Not Considered Further

The following resources (**Table 4.3**) would not be affected by either the No Action Alternative or the action alternatives because either they do not exist within North Dakota, or the alternatives would have no effect on the resource. These resources have been removed from further consideration in this EA.

Table 4.3. Resources Eliminated from Further Consideration

Resource Topic	Reason for Elimination
Wild and Scenic Rivers Act	According to the National Wild and Scenic River System database, there are no National Wild and Scenic Rivers in North Dakota (National Wild and Scenic Rivers System 2024). Thus, the alternatives would have no effect on wild and scenic rivers.
Sole Source Aquifers	According to the U.S. Environmental Protection Agency's (EPA) sole source aquifer map (EPA 2024a), there are no sole source aquifers designated in North Dakota; therefore, the alternatives would have no effect on sole source aquifers.

Resource Topic	Reason for Elimination
Essential Fish Habitat (Magnuson-Stevens Fishery Conservation and Management Act)	There is no designated Essential Fish Habitat in North Dakota (National Oceanic and Atmospheric Administration 2024). Thus, the alternatives would have no effect on Essential Fish Habitat.

4.2. Soils and Topography

Alternatives are evaluated for the potential to cause erosion, sedimentation, and compaction impacts on soils and topography—both in the short term, during construction, and over the long term. Potential impacts on soils and topography are assessed qualitatively by comparison with the surrounding environment. Therefore, this section presents existing soil and topographic conditions within North Dakota for this PEA to provide a basis for this analysis.

The Farmland Protection Policy Act (FPPA) of 1981, 7 U.S.C. §§ 4201 et seq., was enacted to minimize conversion of prime and unique farmland and farmland of statewide or local importance to nonagricultural uses, and to ensure that federal programs are compatible with local, state, and private programs and policies to protect farmland. The FPPA does not consider areas already committed to urban uses as farmland (7 CFR. § 658.2[a]). If an individual project area is outside of an urban area, the Subapplicant should confirm whether the area contains farmland soils by using the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service's (NRCS) web soil survey. Projects that would result in the conversion of important farmland soils to non-farm uses would need to consult with NRCS and complete a land evaluation and site assessment (USDA Form AD-1006). While the presence of farms does not necessarily indicate farmland soils, they can provide an indication of which areas may include protected farmland soils. Additional farmland soils could exist in parts of the states that are not currently occupied by farms. According to the USDA Census of Agriculture, farms occupy approximately 86 percent of North Dakota and include approximately 25,068 farms (USDA 2022). As shown in **Table 4.4**, land in North Dakota consists primarily of cropland and grassland/prairie.

Table 4.4. Land Cover in North Dakota

Land Cover Type	Total Land Use Within State (mi^2)	Land Cover Percentage
Cropland	33,258	47%
Grassland/Prairie	21,228	30%
Emergent Wetlands	3,538	5%
Open Water	2,830	4%
Forest	2,830	4%
Conservation Reserve Program (CRP)	2,830	4%
Developed, Open Space	2,830	4%
Developed, Urban	707	1%

Land Cover Type	Total Land Use Within State (mi^2)	Land Cover Percentage
Shrubland	707	1%
Barren Land	141	0.2%
Total	**70,762**	**100%**

Source: North Dakota Game and Fish Department (NDGF) 2019a

North Dakota encompasses approximately 70,000 square miles. The state is divided by the Missouri Escarpment, with the Central Lowlands physiographic province covering the northeastern portion of the state and the Great Plains physiographic province covering the southwestern portion of the state (National Park Service 2017). The northeast region of the state endured a period of glaciation beneath the Wisconsin Glacier until approximately 20,000 years ago. Glaciation of the land ultimately created three different geographic regions, traversing from east to west, as described in **Table 4.5**.

Table 4.5. Geographic Regions in North Dakota

Region	Characteristics	Elevation
Red River Valley	Terrain is broad and flat, consisting of mostly clay and some sandy soils.	800–1,000 feet
Drift Prairie	Terrain is hilly and consists of potholes across the landscape creating small ponds; soil is mostly rocky.	1,300–1,600 feet
Missouri Plateau	Terrain varies but includes hills, dunes, rivers and badlands; soil is sandy-rocky.	1,800–2,500 feet

Source: North Dakota Studies 2016

There are multiple subprovinces within these three regions. According to the North Dakota Geological Survey (2007), the Red River Valley mainly consists of the former floor of glacial Lake Agassiz, characterized by flat-lying silt and clay deposited on the lake bottom. The Red River Valley also includes the Pembina Escarpment, where the elevation significantly increases to the west and demarcates the start of the Drift Prairie. The Drift Prairie comprises the Turtle Mountains in the north and Coteau des Prairies in the south. These two areas consist of rolling hills and hummocks (small mounds of soil underneath vegetation) created from deposits of superglacial sediment collapsing after glaciers melted. On either side of the Turtle Mountains are two lake basins, including the Souris Lake Plain, which drained naturally approximately 12,000 years prior, and the Devils Lake Basin, which was slowly formed approximately 11,000 years ago and is still currently an active lake.

Further west, the Missouri Escarpment demarcates the Missouri Plateau region. Beyond the escarpment is the Missouri Couteau, consisting of hummocks as well as the man-made Garrison Dam, which further created Lake Sakakawea (North Dakota Geological Survey 2007). Next to the Missouri Couteau to the west is the Coteau Slope, which is mainly characterized by rolling hills and plains. The Little Missouri Badlands are connected to Coteau Slope to the west and southwest.

Topography of this badlands consists of many repetitive small, short, steep hills and/or ridges of land with little to no soil or vegetation on them (North Dakota Geological Survey 2007).

The state soil of North Dakota is the Williams series, accounting for more than 2.2 million acres of soils within the state (Soil Science Society of America 2019). This soil originally formed from calcareous tills that had been deposited by glaciers. Williams soils have a deep profile, which indicates that no bedrock exists within at least 6 feet of the surface. Throughout the profile, soils are generally loam to clay-loam. Owing to their clay texture, these soils cause water to drain moderately and slowly. These soils also have a high amount of natural fertility due to high organic content. The other most common soil types within the state are also loam to clay-loam, including Whorton, Barnes, and Glyndon (Soil Science Society of America 2019).

4.2.1. NO ACTION ALTERNATIVE

Under the No Action Alternative, communities may implement minor utility improvement projects. These activities could have minor short-term adverse impacts on soils, including farmland soils, and topography from ground-disturbing activities, such as excavation and grading, which may lead to increased erosion. Clearing or grading during construction would also result in the temporary loss of native vegetation and exposure of soils to the elements, which could cause increased erosion. Site soils may be revegetated and topography may be altered by grading within the ROWs or utility easements.

Under this alternative, the risk that utilities may be damaged or fail to properly function because of a natural hazard would not be substantively reduced. This could result in the temporary or permanent disruption of services or utilities. Loss of use in developed or agricultural land may occur due to the collapse of pipes, or other modes of failure within the specified utility network. Additionally, lack of repair to certain utilities has the potential to cause damage to land both at the surface level and underground (through ground collapse). Flooding and erosion could also occur if severe weather events exceed the existing stormwater or wastewater utility capacity. Electric utilities that are above ground and made of combustible materials would continue to be at risk for starting or spreading utility-associated wildfire. High-intensity wildfires can alter the physical and chemical properties and the moisture, temperature, and biotic characteristics of soils (U.S. Forest Service 2005). Continued utility damage and failure from natural hazards would require repetitive repair work, which could result in construction-related impacts on soils and topography from ground-disturbing activities, leading to increased erosion. Thus, the No Action Alternative may result in minor to moderate long-term adverse impacts on soils, including farmland soils and topography.

4.2.2. ACTION ALTERNATIVES

General Consequences of the Action Alternatives

In the short term, construction activities associated with the action alternatives that disturb the ground would have similar impacts on soils and topography as those described in the No Action Alternative. Potential impacts would be from excavation, removal of concrete or other material, and installation of replacement utilities. However, erosion and sediment control measures would be

implemented in accordance with national, state, and local requirements. Specifically, construction of the action alternatives would comply with the General Construction Stormwater Permit, which is required for construction disturbance of 1 or more acres and is discussed in greater detail in Section 4.5.2. In accordance with the General Construction Stormwater Permit, the project proponent would develop a Stormwater Pollution Prevention Plan (SWPPP) for specific proposals under the action alternatives, which would require the implementation of measures to reduce pollutants in stormwater discharges and prevent sediment from leaving the construction site. Example control measures include minimizing areas of exposed soil, retaining natural buffers around surface waters, and installing erosion control measures, such as silt fencing. Stabilization of disturbed soil and backfill, as well as compaction of soils and disturbed land, would also mitigate these impacts. During construction, the action alternatives would have minor short-term adverse impacts on soils and topography.

In the long term, utility projects under the action alternatives would reduce the risk that utilities may be damaged or fail to properly function because of a natural hazard. Reduced flooding, wildfire risk, slope failure, ground collapse, and erosion would help to conserve soils and protect existing topography. Stabilization projects that reduce erosion and slope failure would have the potential to protect adjacent farmland soils from washing away. All action alternatives would reduce the need for utility repairs, thus reducing construction-related impacts on soils and topography from ground-disturbing activities. The action alternatives would result in negligible to moderate long-term beneficial impacts on soils and topography, depending on the project type and location.

Replacement Alternative

Utility replacement projects are not expected to have a direct impact on farmland soils. These projects would replace utilities in their existing location and would not irreversibly convert farmland to other uses. Therefore, the Replacement Alternative would likely be consistent with the FPPA. If NRCS requires further review of a specific project, FEMA would complete Form AD-1006 (NRCS 2022) and make a determination under the FPPA.

Relocation Alternative

Utility relocation projects could have minor long-term adverse impacts on farmland soils, depending on the project type and location. Small parcels of ROW, which may include farmland soils, may be acquired to accommodate the relocation. If the relocation requires aboveground components on farmland soils, some small areas of farmland may be converted. However, the relocation of utilities underground, which is typical of most utility line installation, would not irreversibly convert farmland to other uses. Therefore, the Relocation Alternative would likely be consistent with the FPPA. If NRCS requires further review of a specific project, FEMA would complete Form AD-1006 (NRCS 2022) and make a determination under the FPPA.

Installation Alternative

Utility installation projects could have minor long-term adverse impacts on farmland soils, depending on the project type and location. Parcels of ROW or land, which may include farmland soils, may be acquired to accommodate the installation. If a larger area of land is needed to construct a new

utility, such as a detention or retention pond, some areas of farmland may be converted. Therefore, the Installation Alternative could be inconsistent with the FPPA. If NRCS requires further review of a specific project, FEMA would complete Form AD-1006 (NRCS 2022) and make a determination under the FPPA.

Combination Alternative

Generally, the impacts on soils and topography from this alternative would be similar to those described for Replacement, Relocation, and Installation alternatives, as this project type includes a combination of utility replacement, relocation, and/or installation projects.

4.3. Air Quality

This section evaluates the alternatives for the potential to impact air quality from emissions of air pollutants, in both the short and long term.

The Clean Air Act (CAA), as amended, requires EPA to establish NAAQS for six pollutants harmful to human and environmental health, including ozone, nitrogen dioxide, carbon monoxide, sulfur dioxide, lead, and particulate matter (PM) (including PM that is less than 10 micrometers in diameter [PM10] and fine particulate matter less than 2.5 micrometers in diameter [PM2.5]) (EPA 2024b). Fugitive dust, which is considered a component of PM, can also affect air quality. Fugitive dust is released into the air by wind or human activities, such as construction, and can impact the health of humans and the environment. Federally funded actions in nonattainment and maintenance areas for these pollutants are subject to conformity regulations (40 CFR Parts 51 and 93) to ensure that emissions of air pollutants from planned federally funded activities would not cause any violations of the NAAQS, increase the frequency or severity of NAAQS violations, or delay timely attainment of the NAAQS or any interim milestone. According to the EPA Green Book, all counties in North Dakota are currently in attainment status for all criteria pollutants (EPA 2024c).

4.3.1. NO ACTION ALTERNATIVE

Under the No Action Alternative, communities may implement minor utility improvement projects, but they would not constitute the same level of risk reduction as the action alternatives described in this PEA. Minor utility improvement projects would involve the use of construction equipment that would release air pollutants in emissions from the use of heavy equipment and vehicles. However, construction activities would not be expected to increase either air emissions to the extent that they would affect regional attainment status with the NAAQS. Therefore, there may be minor short-term adverse impacts from vehicle and equipment emissions at project sites.

The minor improvements would reduce the risk of utility failure, but not to the level of the action alternatives. Electric utilities that are above ground and made of combustible materials would continue to be at risk for starting or spreading utility-associated wildfire. Wildfire smoke can deteriorate air quality and expose sensitive groups (such as young people, older people, or people with previous respiratory or circulatory health concerns) to harmful pollutants (EPA et al. 2019). In addition, continued utility damage and failure from natural hazards would require repair work. Repair

work could result in minor temporary increases in localized air emissions from construction equipment and vehicles. Repair activities would also not be expected to affect local compliance with the NAAQS. Therefore, there may be a minor periodic long-term adverse impact on air quality.

4.3.2. ACTION ALTERNATIVES

General Consequences of the Action Alternatives

Utility projects associated with the action alternatives would result in temporary emissions from construction activity and use of vehicles and equipment with diesel and gasoline engines. During the construction phase, exposed soil could temporarily increase airborne PM into the project area from fugitive dust. Emissions from construction equipment could have minor temporary effects on the levels of some air pollutants, including carbon monoxide, volatile organic compounds, nitrogen dioxide, ozone, and particulate matter (PM). Local PM2.5 and PM10 levels can increase during activities that generate fugitive dust, such as excavation of soils, demolition of concrete structures, and movement of vehicles on unpaved surfaces. Temporary impacts on air quality would be reduced through the implementation of best management practices (BMPs). Vehicles and equipment running times would be kept as short as possible and areas of exposed soil would be covered or wetted to reduce fugitive dust. Depending on the extent of the equipment and vehicle use, and with implementation of standard construction BMPs and compliance with current EPA emissions standards (EPA 2016) and all other local, state, and federal regulations, there would be negligible to minor, short-term, adverse impacts on air quality during construction.

Generally, activities would be expected to be below de minimis thresholds and would not increase emission levels of regulated air pollutants. However, some large utility projects, or those with longer construction periods, could involve more truck trips and longer durations of heavy equipment usage. Among other factors, the total volume of emissions is a function of the number and type of vehicles and equipment, the distance driven or hours per day operated, and the number of trips made during the project. Prior to applying the PEA to a specific project, consideration should be given as to whether a conformity analysis is necessary.

The action alternatives would reduce the need for utility repairs, thus reducing the air pollutants emitted during repairs. In addition, the retrofit, replacement, or relocation of electric utilities would reduce the risk of utility-associated wildfires and wildfire smoke. Utility improvement projects would have beneficial effects consistent with the Principles, Requirements, and Guidelines (PR&G) sustainable economic development and public safety principles because they would ensure continuity of services and reduce the requirement that infrastructure needs to be built elsewhere to serve a community (Appendix B). Additionally, stormwater improvement projects would have beneficial effects related to health and resilient ecosystems, another PR&G principle, because they would reduce the risk of flooding and associated impacts, such as erosion and damage to vegetation, which can harm terrestrial and aquatic ecosystems. The action alternatives would result in long-term negligible to moderate beneficial impacts on air quality.

Replacement Alternative

For most infrastructure replacement projects, no long-term adverse impacts on air quality would be anticipated because projects completed would replace existing components or would not be a source of long-term air emissions. Some replacement projects may increase the capacity of some components, such as pump stations, which may require additional power. In these instances, it is expected that these components would be powered by electricity and would not result in long-term emissions. If a project would result in a new long-term major source of air pollutants that would cause an area to be out attainment for any NAAQS, an SEA would need to be prepared.

Relocation Alternative

Similar to replacement projects, no long-term adverse impacts on air quality are anticipated because proposed utility relocation projects would relocate existing components or typically would not be a source of long-term air emissions. Some electric components of utility systems may be upgraded but would not result in long-term emissions. However, some project types may include the installation of an emergency backup generator for new or existing facilities. Emergency generators would be considered a new source of emissions that would need to be permitted and comply with all air quality standards. If a project would result in a new long-term major source of air pollutants that would cause an area to be out attainment for any NAAQS, an SEA would need to be prepared.

Installation Alternative

Similar to replacement and relocation projects, no long-term adverse impacts on air quality are anticipated. While utility installation projects may include the construction of new electric components, it is expected that the operation of these components would not result in long-term emissions. However, some project types may include the installation of an emergency backup generator for new or existing facilities, which would be considered a new source of emissions and would need to be permitted and comply with all air quality standards. If a project would result in a new long-term major source of air pollutants that would cause an area to be out attainment for any NAAQS, an SEA would need to be prepared.

Combination Alternative

Generally, the impacts on air quality from this alternative would be similar to those described for Replacement, Relocation, and Installation alternatives, as this project type includes a combination of utility replacement, relocation, and/or installation projects.

4.4. Climate

This section evaluates the alternatives for the potential to impact the climate from emissions of GHGs, in both the short and long term.

Climate-informed science refers to changes in the Earth's climate caused by a general warming of the atmosphere. Its primary cause is emissions of GHG, including carbon dioxide and methane. Climate-informed science can affect species distribution, temperature fluctuations, and weather

patterns. On a regional scale, climate-informed science may increase variations in stream levels due to changes in precipitation, water temperature, ice coverage, and evaporation.

EO 13990, Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis, directed federal agencies to review and address regulations that conflict with national objectives, such as reducing GHG emissions, strengthening climate resilience, and prioritizing environmental justice (EJ) and public health. CEQ's "National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change" was published in the *Federal Register* on January 9, 2023. The new guidance provides best practices for climate-informed science analyses, including actions such as considering GHG emissions and climate-informed science impacts during the identification of alternatives, quantifying a Proposed Action's projected GHG emissions or reduction using best available data, and providing social cost of GHG estimates to translate climate impacts into a more accessible metric of dollars. Social cost of GHG estimates represent the societal value or cost of GHG emissions changes resulting from actions that impact cumulative global emissions in a small or marginal way. For more than a decade, federal agencies have applied the social cost of GHG metrics to estimate the impacts of their actions on the climate (Harvard Environmental and Energy Law Program 2022). The estimated social cost of GHG emissions would be determined on a project-specific basis.

4.4.1. NO ACTION ALTERNATIVE

Under the No Action Alternative, communities may implement minor utility improvement projects, but they would not constitute the same level of risk reduction as the action alternatives described in this PEA. Minor utility improvement projects could result in minor temporary localized GHG emissions from vehicles and equipment used to implement projects. However, construction activities would not be expected to increase either air emissions or GHGs to the extent that they would contribute to changes in regional climate. Therefore, there may be minor short-term adverse impacts from vehicle and equipment emissions at project sites.

The minor improvements would reduce the risk of utility failure, but not to the level of the action alternatives. Continued utility damage and failure from natural hazards would require repair work. Repair work could result in minor temporary increases in GHG emissions from construction equipment and vehicles. Repair activities would also not be expected to increase GHGs to the extent that the regional climate would be affected. Therefore, there may be a minor periodic long-term adverse impact on climate.

4.4.2. ACTION ALTERNATIVES

General Consequences of the Action Alternatives

Utility projects associated with the action alternatives would result in temporary GHG emissions from the operation of vehicles and equipment with diesel and gasoline engines. GHG generating construction activities would be temporary and impacts would be reduced through the implementation of BMPs to reduce emissions from equipment use. Depending on the extent of the equipment and vehicle use, and with implementation of standard construction BMPs and

compliance with current EPA emissions standards (EPA 2016) and all other local, state, and federal regulations, there would be negligible to minor, short-term, adverse impacts on climate during construction.

The action alternatives would reduce the need for utility repairs, thus reducing GHG emissions during repairs. In addition, utility improvement projects would increase a community's resilience to climate impacts, such as increased storm events and wildfires. Utility improvement projects would have beneficial effects consistent with the Principles, Requirements, and Guidelines (PR&G) sustainable economic development and public safety principles because they would ensure continuity of services and reduce the requirement that infrastructure needs to be built elsewhere to serve a community (Appendix B). Additionally, stormwater improvement projects would have beneficial effects related to healthy and resilient ecosystems, another PR&G principle, because they would reduce the risk of flooding and associated impacts, such as erosion and damage to vegetation, which can harm terrestrial and aquatic ecosystems. The action alternatives would result in long-term negligible to moderate beneficial impacts on climate.

Replacement Alternative

For most infrastructure replacement projects, no long-term adverse impacts on climate would be anticipated because projects completed would replace existing components or would not be a source of long-term air emissions. Some replacement projects may increase the capacity of some components, such as pump stations, which may require additional power. In these instances, it is expected that these components would be powered by electricity and would not result in long-term emissions. On a project-specific basis, consistent with CEQ's "National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change," a Proposed Action's emissions would be analyzed based on best available science while considering the project's scale and context. If it is determined that a project would have a major impact on climate, an SEA would need to be prepared.

Relocation Alternative

Similar to replacement projects, no long-term adverse impacts on climate are anticipated because proposed utility relocation projects would relocate existing components or typically would not be a source of long-term air emissions. Some electric components of utility systems may be upgraded but would not result in long-term emissions. However, some project types may include the installation of an emergency backup generator for new or existing facilities. Emergency generators would be considered a new source of emissions and would need to be permitted and comply with all air quality standards. On a project-specific basis, a Proposed Action's emissions would be analyzed based on best available science while considering the project's scale and context. If it is determined that a project would have a major impact on climate, an SEA would need to be prepared.

Installation Alternative

Similar to replacement and relocation projects, no long-term adverse impacts on climate are anticipated. While utility installation projects may include the construction of new electric components, it is expected that the operation of these components would not result in long-term

emissions. However, some project types may include the installation of an emergency backup generator for new or existing facilities, which would be considered a new source of emissions and would need to be permitted and comply with all air quality standards. On a project-specific basis, a Proposed Action's emissions would be analyzed based on best available science while considering the project's scale and context. If it is determined that a project would have a major impact on climate, an SEA would need to be prepared.

Combination Alternative

Generally, the impacts on climate from this alternative would be similar to those described for Replacement, Relocation, and Installation alternatives, as this project type includes a combination of utility replacement, relocation, and/or installation projects.

4.5. Surface Waters and Water Quality

This section evaluates the alternatives for the potential to degrade existing water quality conditions or impact surface and groundwater resources regulated by the Clean Water Act (CWA) of 1977, 33 U.S.C. §§ 1251 et seq., and other federal, state, and local water quality laws.

Section 401 of the CWA gives states and tribes the authority to grant, deny, or waive certification of proposed federal licenses or permits for projects that result in discharges into waters of the United States 33 U.S.C. § 1341. Furthermore, Section 401 also requires that, before a Section 404 permit (as discussed below) can be issued for an activity, the activity must not exceed state- or tribal-specific water quality standards. The North Dakota Department of Environmental Quality's (DEQ) Division of Water Quality issues 401 Water Quality Certifications for projects that require a Section 404 permit from USACE to address impacts on waters of the U.S. Subapplicants should coordinate with the North Dakota DEQ to determine the applicable project-specific regulations and conditions.

The CWA further requires states to identify waters that do not or are not expected to meet applicable water quality standards with current pollution control technologies alone. On an annual basis, states issue a water quality report under Section 305(b) and 303(d) of the CWA (referred to as the *Integrated Water Quality Report*) (33 U.S.C. § 1313). Section 303(d) authorizes EPA to assist states, territories, and authorized tribes in listing impaired waters and developing Total Maximum Daily Loads (TMDLs) for impaired waterbodies. A TMDL establishes the maximum amount of a pollutant or contaminant allowed in a water body and serves as the starting point or planning tool for restoring water quality. In compliance with CWA Section 303(d), North Dakota DEQ maintains a list of water quality impaired waters, also known as the 303(d) list. Approximately 6,000 miles of river and streams in North Dakota have been assessed as having at least one beneficial use impaired with a total maximum daily load required (DEQ 2023).

Section 402 of the CWA regulates the discharge of pollutants or contaminants from point sources as well as stormwater runoff into waterways through National Pollutant Discharge Elimination System (NPDES) permits 33 U.S.C. § 1342. These permits limit what can be discharged into waterways and provide for project-specific monitoring and reporting requirements. Construction activities that have the potential to disturb soils that could lead to erosion and sedimentation must obtain and comply

with a general construction NPDES permit for stormwater discharges. Under the NPDES, the North Dakota DEQ regulates both point and nonpoint pollutant sources, including stormwater and stormwater runoff, via a permitting system (North Dakota Administrative Code Article 33.1-16). Activities that disturb 1 or more acres of ground are required to apply for a permit through the North Dakota DEQ.

Section 404 of the CWA regulates the placement of dredged or fill material into waters of the United States, including wetlands, lakes, streams, rivers, and other waterways 33 U.S.C. § 1344. Through Section 404 permitting, EPA and USACE aim to avoid and minimize loss of wetlands and other water resources and to compensate for unavoidable loss through mitigation, restoration, enhancement, and creation. Section 404 is implemented by USACE in most states. The North Dakota Game and Fish Department acts as a commenting agency through the Section 404 process (National Association of Wetland Managers 2015).

The North Dakota Department of Water Resources and water resource districts are responsible for regulating drainage and the placement of fill in North Dakota. North Dakota's Office of the State Engineer is responsible for several regulatory responsibilities as part of the Department of Water Resources, including overseeing permit reviews for the draining of any water resource and for watershed projects that encompass an area greater than 80 acres. Water resource districts are responsible for water management in North Dakota at the local county level. The water resource districts address water management issues such as drainage, water control, watershed planning, and assessment projects. Each water resources board has the authority to establish rules and regulations related to the management, control, and conservation of water resources and the prevention of pollution, contamination, or other misuse of water resources within the district (North Dakota Administrative Code Chapter 61-16.1).

4.5.1. NO ACTION ALTERNATIVE

Under the No Action Alternative, communities may implement minor utility improvement projects. Some of these projects may require in-water work that could further contribute to sedimentation and may potentially alter waterways. However, these project types would be required to adhere to CWA and state waterway regulations, including obtaining necessary permits that would require mitigation and BMPs to minimize impacts on surface waters. These projects would be smaller in scale and would likely not provide the same level of hazard mitigation, repair, or resilience as the action alternatives described in this PEA. Therefore, as long as projects under the No Action Alternative adhere to permitting requirements, there would be minor short-term adverse impacts from construction activities.

Although minor utility improvement projects under the No Action Alternative would have some mitigative effects, these effects would be limited because the projects would likely be smaller in scale and less comprehensive than the action alternatives. Under the No Action Alternative, the risk to utilities would remain, potentially leaving communities without services and vulnerable to future natural hazards. Erosion and sedimentation may increase if banks are left in disrepair because damaged utility infrastructure may be a source of sediment inputs into surface waters. Failed or

inadequately sized stormwater utilities could result in increased flooding because stormwater would not be adequately collected or managed. In some cases, during extreme weather events, wastewater treatment lagoons would remain at risk for overflowing, which would result in untreated wastewater flowing into the surrounding area and into groundwater and other waterways. Continued utility damage and failure from natural hazards would require repetitive repair work, which could contribute to sedimentation and water quality impacts from construction activities. Therefore, there may be a minor to moderate long-term adverse impact on surface waters and water quality under the No Action Alternative.

4.5.2. ACTION ALTERNATIVES

General Consequences of the Action Alternatives

In the short term, ground-disturbing construction activities associated with utility projects, such as excavation and grading, may increase erosion and cause sedimentation to enter surface waters. Excavation and grading would also result in the temporary loss of native vegetation and subsequently expose soils to the elements, which could further increase erosion and sedimentation. Construction activities, including grading and excavation, and the discharge of fill material into surface waters may temporarily alter surface water quality, including but not limited to temperature, dissolved oxygen, or turbidity. Prior to construction, the Subapplicant would coordinate with USACE and the North Dakota DEQ to obtain any required CWA permits. Potential erosion issues would be minimized by following all conditions required by CWA permits, including developing a SWPPP, and by state and local regulations that require erosion control.

Pollutants such as oils, lubricants, and other hazardous materials have the potential to percolate down to aquifers as a result of spills and leaks from construction equipment. Project activities would need to adhere to state and local regulations to reduce the risk of hazardous leaks and spills, as discussed further in Section 4.13; therefore, there would be a minor short term adverse impact from construction activities.

In the long term, projects associated with the action alternatives would reduce the risk of utilities being damaged or functioning improperly because of a natural hazard. Surface waters would be better protected by the reduction in flooding, wildfire risk, slope failure, ground collapse, and erosion that may be associated with damaged or vulnerable utilities. Properly functioning stormwater and wastewater utilities could reduce the risk of flooding, thereby protecting waterbodies from runoff and pollutants and improving water quality. The action alternatives would reduce the need for utility repairs, thus reducing potential sedimentation and water quality impacts from repairs. The action alternatives would result in negligible to moderate long-term beneficial impacts on surface waters and water quality, depending on the project type and location.

Replacement Alternative

The impact on surface waters and water quality under the Replacement Alternative would be the same as those discussed under the General Consequences of the Action Alternatives.

Relocation and Installation Alternatives

In addition to the previously discussed short-term impacts, utility relocation and installation projects may require the removal or relocation of utility line water crossings. Utility removal may include excavation and restoration of the area along streambanks or abandonment in place. Utility relocation would most likely include trenchless crossing methods, such as high-pressure directional drilling or punch-and-bore crossings that cause very little disturbance to the stream bed and banks. However, some projects may include minor trenching through stream banks and channels. Prior to construction, the Subapplicant would coordinate with USACE and the North Dakota DEQ to obtain any required CWA permits. If a project would require in-water work that would result in the dredging or filling of more than 1 acre of a waterbody, it may not be covered under a Nationwide Permit from USACE as the project could have major impacts on surface water and water quality, and an Individual Permit may be needed. The impact of in-water work activities would be considered on a project-specific basis, and for any projects that would have major impacts on surface water and water quality, an SEA would need to be prepared. However, the Subapplicant would be responsible for implementing the general conditions and mitigation measures stipulated in the USACE permit, which could reduce potential impacts to a minor level. In addition, project activities must adhere to federal, state, and local regulations that require erosion control and reduce the risk of hazardous leaks and spills; therefore, there would be a minor, short term, adverse impact from construction activities.

Combination Alternative

Generally, the impact on surface waters and water quality from this alternative would be similar to those described for Replacement, Relocation, and Installation alternatives, as this project type includes a combination of utility replacement, relocation, and/or installation projects.

4.6. Wetlands

EO 11990, Protection of Wetlands, requires federal agencies to consider alternatives to working within wetlands and to limit potential impacts on wetlands if there are no practicable alternatives. FEMA regulation 44 CFR Part 9, Floodplain Management and Protection of Wetlands, sets forth the policy, procedures, and responsibilities to implement and enforce EO 11990 and prohibits FEMA from funding activities in a wetland unless no practicable alternatives are available. Activities that disturb wetlands may also require a permit from USACE under Section 404 of the CWA.

As discussed in Section 4.5, the North Dakota DEQ's Division of Water Quality issues 401 Water Quality Certifications for projects that require a Section 404 permit from USACE to address impacts on waters of the U.S., including wetlands. The North Dakota Department of Water Resources and water resource districts are responsible for regulating drainage and the placement of fill in North Dakota (North Dakota Century Code Section 61-32-03 and North Dakota Administrative Code Section 89-02-01). The Office of the State Engineer oversees permit reviews for the draining of any water resource, including wetlands, and for watershed projects that encompass an area greater than 80 acres. North Dakota has not adopted regulations, policies, or legislation for wetland mitigation (National Association of Wetland Managers 2015).

If work within wetlands is necessary to complete a project, federal, state, and local permits and mitigation may be required. Wetland impacts may require a Section 404 permit from USACE. State and local permits may be required even if a federal permit is not. If wetland impacts are unavoidable, compensatory mitigation may be required by federal and state authorities.

Wetlands cover approximately 2.7 million acres of North Dakota, and more than 90 percent of the wetlands in North Dakota are classified as natural basin wetlands, commonly called prairie potholes (National Association of Wetland Managers 2015). The prairie potholes primarily contain persistent-emergent wetlands, variously called wet meadows, marshes, and fens. Other palustrine classes that exist but are not common in North Dakota are scrub-shrub wetlands and forested wetlands.

4.6.1. NO ACTION ALTERNATIVE

Under the No Action Alternative, there would be some construction associated with minor utility improvement projects that could occur within or adjacent to wetlands, and potentially release pollutants and sediments into those wetlands or result in the fill of wetlands. Although minor projects under the No Action Alternative may have some long-term mitigative effects, the risk that utilities may be damaged or fail to properly function because of a natural hazard would not be substantively reduced. The risk of flooding and erosion would not be substantially reduced if severe weather events exceed the existing stormwater or wastewater utility capacity, and sediments, pollutants, and contaminants would continue to be transferred into wetlands via floodwaters. In addition, continued utility damage and failure from natural hazards would require repair work, which could also result in the release of pollutants and sediment into wetlands. Therefore, potential impacts on wetlands would be minor to moderate and adverse, in both the short term and long term.

4.6.2. ACTION ALTERNATIVES

General Consequences of the Action Alternatives

The action alternatives have the potential to cause short-term temporary impacts if wetlands are directly disturbed or impacted by temporary fill or other construction activities within or adjacent to wetlands, thereby increasing sedimentation or turbidity within wetland waters.

There may be impacts beyond the project footprint if sources of hydrology are affected or if portions of wetlands require permanent filling or conversion to non-wetland uses. When partially filled or converted, the remaining wetland acreage may experience declines in functions, values, and habitat quality; changes in hydrology and natural flow within the wetlands; and spread of invasive species. This PEA presumes that projects and any connected actions would follow any applicable CWA permit conditions to minimize impacts on wetlands. The PEA also presumes projects would be designed to avoid permanent impacts on wetlands. Wetland impacts would be considered on a project-specific basis and for any projects that would have major impacts on wetlands, an SEA would need to be prepared. However, the Subapplicant would be responsible for implementing the general conditions and mitigation measures stipulated in the USACE permit, which could reduce potential impacts to a minor level. Therefore, individual projects covered under this PEA may have either no impacts or up to minor adverse impacts on wetlands, in the short and long term, because projects would follow all

required permitting conditions. Stormwater and wastewater utility improvement projects would be consistent with the PR&G guiding principles because stormwater management could protect wetlands from runoff and pollutants and would benefit affected watersheds (Appendix B). Therefore, these projects would have negligible to moderate, long-term, beneficial impacts on wetlands, depending on the project type and location. FEMA will apply the eight-step decision-making process to consider site-specific impacts of proposed projects prior to approval to consider alternatives and mitigation measures.

4.7. Floodplains

EO 11988, Floodplain Management, requires federal agencies to avoid, to the extent possible, short- and long-term adverse impacts associated with the occupancy and modification of floodplains, and to avoid direct and indirect support of floodplain development, wherever there is a practicable alternative. FEMA's regulations for complying with EO 11988 are found in 44 CFR Part 9. Under the National Flood Insurance Act, 42 U.S.C. § 4001 et seq. and its implementing regulations, 44 CFR Part 60, communities must meet certain floodplain development standards to participate in the National Flood Insurance Program. Implemented locally by North Dakota Department of Water Resources (FEMA 2024c), there are 340 National Flood Insurance Program–participating communities in North Dakota. Subapplicants may need to coordinate with the North Dakota Department of Water Resources and local floodplain administrator to acquire any necessary approval for construction within the floodplain.

FEMA implemented the Federal Flood Risk Management Standard (FFRMS), which went into effect on September 9, 2024, and requires that FEMA determine the appropriate vertical flood elevation and corresponding horizontal FFRMS floodplain using either the Climate Informed Science Approach, the Freeboard Value Approach, or the 0.2 Percent Annual Chance Flood Approach (FEMA 2024d). FFRMS FEMA Policy: FP 206-24-005 provides an overview of these three approaches (https://www.fema.gov/sites/default/files/documents/fema_floodplain-management_ffrms-policy_092024.pdf). FFRMS would be considered on a project-specific basis, as applicable, to determine whether an action is inside or outside of the floodplain and to determine appropriate minimization requirements.

4.7.1. NO ACTION ALTERNATIVE

Under the No Action Alternative, there could be some construction associated with minor utility improvement projects occurring within the floodplain that could alter the floodplain or potentially release pollutants and sediments into the floodplain. Thus, there would be a negligible to minor short-term adverse impact on floodplains.

In the long term, the risk that utilities may be damaged or fail to properly function because of a natural hazard would not be substantively reduced. The risk of flooding would not be substantially reduced if severe weather events exceed the existing stormwater or wastewater utility capacity. Electric utilities that are above ground and made of combustible materials would continue to be at risk for starting or spreading utility-associated wildfire. If a wildfire were to occur, structures and

vegetation would be destroyed, which could result in an increase in stormwater runoff and sedimentation following a rain event. For all project types, continued utility damage and failure from natural hazards would also require repair work, which could result in the release of pollutants and sediment into the floodplain from construction activities. Therefore, there would be a minor to moderate long-term adverse impact from flood risks and impacts on floodplains.

4.7.2. ACTION ALTERNATIVES

General Consequences of the Action Alternatives

Under the action alternatives, construction activities would have the potential to release sediments and pollutants into the floodplain. These impacts would be minimized by following all permit conditions related to sediment control, as discussed in Sections 4.2, 4.5, and 4.6. Thus, there would be a minor short-term adverse impact on floodplains. Furthermore, Subapplicants would be required to comply with state and local floodplain and floodway regulations, including coordination with their local floodplain manager, to ensure impacts on floodplains would be minimized.

In the long term, utility projects under the action alternatives would reduce the risk that utilities may be damaged or fail to properly function because of a natural hazard. The implementation of stormwater and wastewater improvement projects would reduce the risk of flooding and the amount of pollutants entering the floodplain. In addition, the retrofit, replacement, or relocation of electric utilities would reduce the risk of utility-associated wildfires and increased runoff and sedimentation in the event of a wildfire. All action alternatives would reduce the need for utility repairs, thus reducing the potential release of pollutants and sediment into the floodplain from construction activities. Therefore, there would be a minor to moderate long-term beneficial impact from utility improvement projects on floodplain resources, depending on the project type and location. FEMA will apply the eight-step decision-making process to consider site-specific impacts of proposed projects prior to approval to consider alternatives and mitigation measures.

4.8. Vegetation

This section evaluates the alternatives for their potential to impact all plants and trees that occur within North Dakota, in both the short and long term. EO 13112, Invasive Species, requires federal agencies to prevent the introduction of invasive species and provide for their control to minimize the economic, ecological, and human health impacts caused by invasive species. EO 13112 defines invasive species as alien species whose introductions do, or are likely to, cause economic or environmental harm or harm to human health, including noxious weed plant species. Invasive plants can alter an area's diversity for both plant and animal life by dominating areas where they have become established and crowding out native vegetation (U.S. Forest Service 2024).

EPA has defined a system of ecoregions to describe and assess national and regional environmental resources and to structure and implement ecosystem management strategies across federal agencies, state agencies, and nongovernmental organizations. Ecoregions are areas where the type, quality, and quantity of environmental resources are generally similar; they are identified by analyzing the patterns and composition of biotic and abiotic phenomena that affect or reflect

differences in ecosystem quality (EPA 2024e). These ecoregions provide a high-level view of the vegetation and general ecosystem characteristics within their footprints. North Dakota overlaps four EPA-designated Level III ecoregions, as shown in Figure 4-1 and described in Table 4.6.

Vegetation refers to all plants and trees that occur within North Dakota. Vegetation composition varies greatly between habitats and microhabitats, depending on environmental conditions (e.g., water availability, soil type, temperature, and sunlight exposure). Because the action alternatives focus on utility improvement projects, most projects would occur within an existing ROW, near and connected to existing utility systems, and within previously disturbed areas. However, some projects may include construction within new and undisturbed ROWs.

The primary vegetation communities in North Dakota are grasslands, wetlands, and forests. Grasslands in North Dakota, also known as prairies, can be divided into three general categories that are defined by a unique blend of grasses and forbs. These categories are tallgrass prairie, mixed-grass prairie, and shortgrass prairie (NDGF 2019b).

The most common vegetation community in North Dakota, mixed-grass prairies, comprise short grass and tallgrass species and contain a combination of sedges and warm and cool season grasses. Common grass species in mixed-grass prairies include prairie junegrass (*Koeleria macrantha*), western wheatgrass (*Pascopyrum smithii*), green needlegrass (*Nassella viridula*), needle-and-thread (*Hesperostipa comata*), blue grama (*Bouteloua gracilis*), little bluestem (*Schizachyrium scoparium*), and needleleaf sedge (*Carex duriuscula*). Common forb species in mixed-grass prairies include pasque flower (*Pulsatilla* sp.), western wall-flower (*Erysimum capitatus*), prairie smoke (*Geum triflorum*), Missouri milkvetch (*Astragalus missouriensis*), lead plant (*Amorpha cancescens*), Indian breadroot (*Pediomelum esculentum*), purple prairie clover (*Dalea purpurea*), *Gaura* species, harebell (*Campanula rotundifolia*), narrowleaf blazing star (*Liatris microcephala*), ball cactus (*Parodia magnifica*), purple coneflower (*Echinacea purpurea*), yarrow (*Achillea millefolium*), and several species of goldenrods (*Solidago* sp.) (NDGF 2019b).

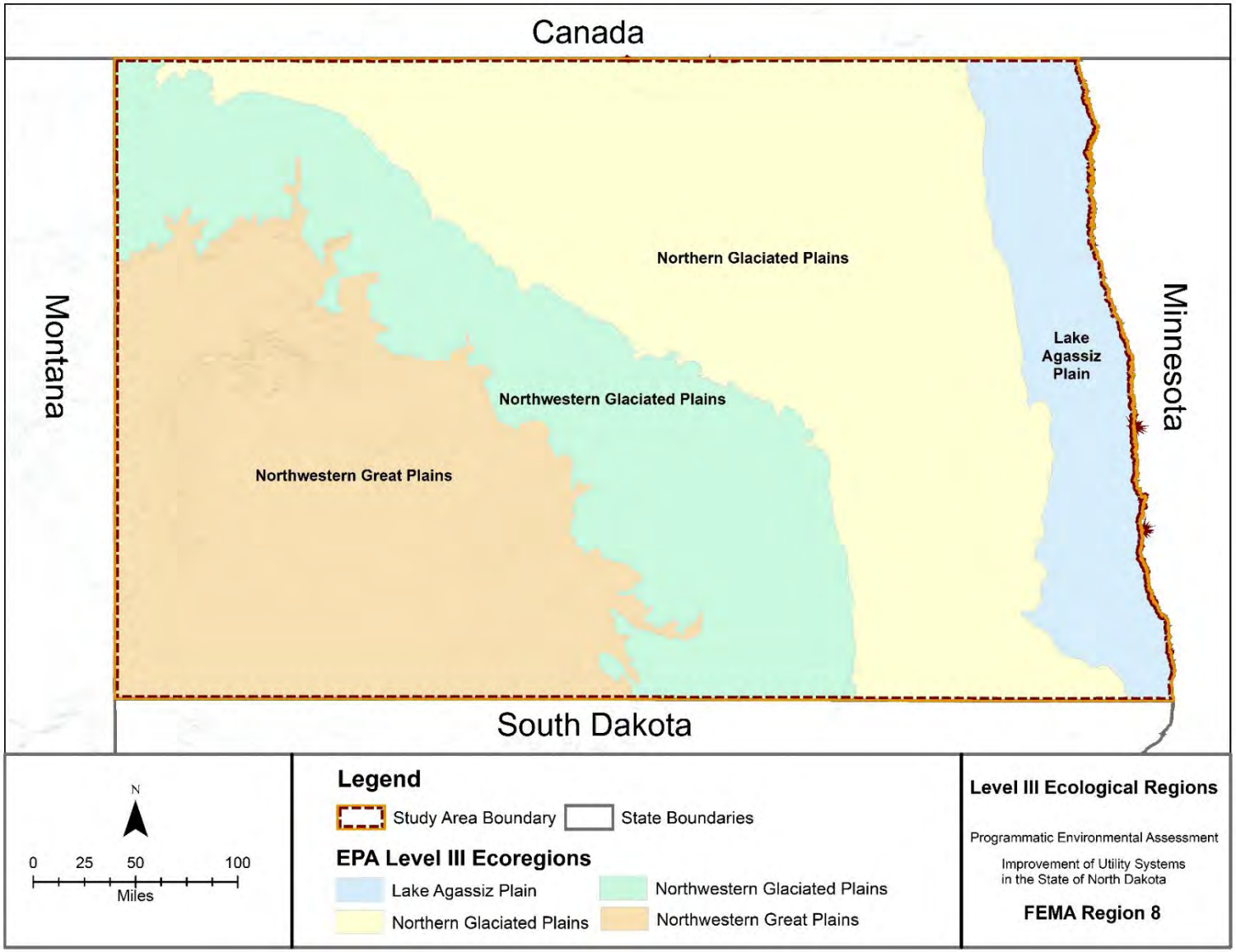


Figure 4-1. Ecoregions in North Dakota

Table 4.6. EPA Level III Ecoregions in North Dakota

Level III Ecoregion	Area (Acres)	Percentage of Total Area	Description of Vegetation and Other Ecosystem Features
Northern Glaciated Plains	16,949,341	37.4%	Characterized by a flat to gently rolling landscape composed of glacial drift. Soils are fertile; however, agricultural success is subject to annual climatic variations. The land cover is composed of a transition between the tall and shortgrass prairie vegetation communities and includes high concentrations of temporary and seasonal wetlands.
Northwestern Great Plains	13,535,866	29.9%	Characterized by a rolling plain of shale, siltstone, and sandstone with the occasional butte and badland. Most of the ecoregion has been converted for agriculture; however, native prairies persist in areas of steep or broken topography.
Northwestern Glaciated Plains	10,275,259	22.7%	Characterized by significant surface irregularity and high concentrations of wetlands. This ecoregion marks the westernmost extent of the continental glaciation. Land use is transitional between predominantly cattle ranching and farming to the west of the ecoregion and dryland forming to the east.
Lake Agassiz Plain	4,486,502	9.9%	Characterized by extremely flat topography composed of thick lacustrine sediments underlain by glacial till. Areas historically dominated by tallgrass prairie within this ecoregion have been replaced by agriculture lands supporting corn, soybeans, and sugar beets (*Beta vulgaris ssp. vulgaris*).

Source: EPA 2024e

Tallgrass prairies in North Dakota are almost exclusively found in the Red River Valley and may include more than 200 separate plant species. Dominant species in tallgrass prairies include big bluestem (*Andropogon gerardii*), switchgrass (*Panicum virgatum*), Indiangrass (*Sorghastrum nutans*), and prairie dropseed (*Sporobolus heterolepis*). Other common grass species include little bluestem, slender wheatgrass (*Elymus trachycaulus*), porcupine grass (*Miscanthus sinensis*), mat muhly (*Muhlenbergia richardsonis*), fescue sedge (*Carex festucacea*), and meadow sedge (*Carex praticola*). Common forbs that may be found in tallgrass prairies include blue-eyed grass (*Sisyrinchium albidum*), meadow anemone (*Anemone canadensis*), prairie cinquefoil (*Drymocallis arguta*), wild licorice (*Glycyrrhiza lepidota*), prairie blazing star (*Liatris pycnostachya*), tall goldenrod (*Solidago altissima*), black-eyed susan (*Rudbeckia hirta*), white sedge (*Carex canescens*), and prairie-fringed orchid (*Platanthera leucophaea*) (NDGF 2019b).

Shortgrass prairies in North Dakota are generally found in elevated areas of the Missouri Slope region. Shortgrass prairies are dominated by warm season species that can survive with minimal rainfall. Common grass species in shortgrass prairies are generally mature at 6 to 12 inches in height and include blue grama, buffalo grass (*Bouteloua dactyloides*), needle-and-thread, needleleaf sedge, spikemoss (*Selaginella* sp.), and threadleaf sedge (*Carex filifolia*). Common forb species include beardtongue (*Penstemon* sp.), buffalo-bean (*Thermopsis rhombifolia*), death camas (*Zigadenus venenosus*), fringed sage (*Artemisia frigida*), moss phlox (*Phlox subulate*), prickly pear (*Opuntia basilaris*), purple loco (*Oxytropis lambertii*), sandlily (*Leucocrinum montanum*), silverleaf (*Solanum elaeagnifolium*), white beardtongue (*Penstemon digitalis*), and white wild onion (*Allium canadense*) (NDGF 2019b).

Common wetland emergent vegetation in Nort Dakota includes fine-textured grasses, rushes, low sedges, bulrushes, and cattails (*Typha* sp.). Other wetland classes that are present but not common in the state are scrub-shrub and forested wetlands. Common vegetation found in scrub-shrub wetlands includes willows (*Salix* sp.), cottonwood (*Populus deltoides*), and aspen (*Populus tremula*), and forested wetlands are composed primarily of cottonwoods in the overstory (Berkas 1996).

Federally listed plant species with the potential to occur in North Dakota are discussed in Section 4.10.

The most widespread invasive plants within North Dakota are leafy spurte (*Euphorbia esula*), Canada thistle (*Cirsium arvense*), and cheatgrass (*Bromus tectorum*) (BLM 2023). The Midwest Invasive Species Information Network lists several prohibited species and noxious weeds that occur within the state. These include but may not be limited to britteleaf naiad (*Najas minor*), curly pondweed (*Potamogoten crispus*), Eurasian watermilfoil (*Myriophyllum spicatum*), flowering rush (*Botomus umbellatus*), purple loosestrife (*Lythrum salicaria*), saltcedar (*Tamarix* sp.), spotted knapweed (*Centaurea stoebe*), and wormwood (*Artemisia absinthium*) (Midwestern Invasive Species Information Network 2024).

4.8.1. NO ACTION ALTERNATIVE

Communities may implement minor utility improvement projects under the No Action Alternative. These project activities could cause a short-term minor to moderate localized effect on vegetation from ground disturbance and possible vegetation removal, which could alter the composition of the vegetative community and result in the introduction or spread of invasive species. Therefore, the No Action Alternative may have negligible to minor short-term adverse impacts on vegetation.

In the long term, the risk that utilities may be damaged or fail to properly function because of a natural hazard would not be substantively reduced. The risk of flooding would not be substantially reduced if severe weather events exceed the existing stormwater or wastewater utility capacity, which could negatively impact vegetation leading to root damage, reduced oxygen, disease, or stunted growth. Electric utilities that are above ground and made of combustible materials would continue to be at risk for starting or spreading utility-associated wildfire. In the event of a wildfire, there could be a loss of vegetation and the subsequent establishment of invasive species. In

addition, continued utility damage and failure from natural hazards would require repair work, which could also result in vegetation removal. Therefore, there would be a negligible to moderate long-term adverse impact on vegetation and adverse effects related to invasive species.

4.8.2. ACTION ALTERNATIVES

General Consequences of the Action Alternatives

In the short term, equipment and vehicles used during construction of utility projects could disturb or require the removal of vegetation, which could result in the fragmentation of native plant communities and the loss of pollinator habitat. The removal of upland vegetation could result in compacted and disturbed soils that are more prone to erosion and colonization by invasive species. Removal of riparian vegetation could result in stream banks becoming destabilized, which could increase the potential for erosion. However, most projects would require disturbed areas to be replanted (with native or desirable species and BMPs) to reduce the impacts from erosion; this would reduce the susceptibility for invasive plants and noxious weeds to regrow in the project area. Vegetation removal would be considered on a project-specific basis and for any projects that would have major impacts on native species, their habitats, or the natural processes sustaining them, cause the spread of noxious weeds, or include the clearing of forested land with old-growth characteristics, an SEA would need to be prepared. Therefore, the action alternatives would have a negligible to moderate short-term adverse effects on vegetation and invasive species, depending on the quality of existing vegetation.

The long-term maintenance of utilities may require the use of herbicide or livestock grazing to remove or manage vegetation and control invasive species. Herbicide has the potential to directly affect non-target plant and animal species by causing mortality and morbidity. Indirect impacts on wildlife include loss of habitat due to effects on non-target plant species. To minimize these potential impacts, herbicide use would be limited to EPA-approved herbicide for the project-specific application (i.e., if used near water, would be approved for use in or near water) and with appropriate BMPs to prevent drift, overspray, or impacts on non-target plants or areas. The use of grazing livestock has the potential to deplete vegetation and displace natural wildlife species or disrupt feeding and nesting patterns. The Subapplicant would monitor the quantity and quality of residual vegetation to obtain the desired amount of vegetation management without overgrazing. To avoid loss of desirable plants and sensitive species, these areas would be fenced off or protected to prevent the grazing of such plants. The Subapplicant would also avoid grazing programs during seed production of non-target species. Therefore, the action alternatives would have a minor long-term adverse effect on vegetation from the use of herbicide or livestock grazing.

In the long term, the action alternatives would reduce the risk that utilities may be damaged or fail to properly function because of a natural hazard. The implementation of stormwater and wastewater improvement projects would reduce the risk of flooding, protecting nearby vegetation from flood damage. In addition, the retrofit, replacement, or relocation of electric utilities would reduce the risk of utility-associated wildfires and the loss of vegetation and establishment of invasive species in the

event of a wildfire. Therefore, there would be a negligible to moderate long-term beneficial impact from utility improvement projects on vegetation.

4.9. Fish and Wildlife

This section evaluates the alternatives for the potential to impact all fish and wildlife that occur within North Dakota, in both the short and long term. Fish and wildlife include any species that occupy, breed, forage, rear, rest, hibernate, or migrate through the state. Regulations relevant to fish and wildlife include the Migratory Bird Treaty Act (MBTA), the Bald and Golden Eagle Protection Act (BGEPA), and EO 13112 (Invasive Species). Threatened and endangered fish and wildlife species are evaluated separately in Section 4.10.

The MBTA of 1918, as amended, 16 U.S.C. §§ 703 through 712, protects migratory birds and their nests, eggs, and body parts from killing, capturing, selling, trading, and transport. All native birds, including common species, are protected by the MBTA. A migratory bird is any species or family of birds that live, reproduce, or migrate within or across international borders at some point during their annual life cycle. Projects likely to result in the purposeful taking of birds protected under the MBTA would require the issuance of permits from the U.S. Fish and Wildlife Service (USFWS).

The BGEPA of 1940, 16 U.S.C. §§ 668 et seq., prohibits the take, possession, sale, or other harmful action of any golden eagle (*Aquila chrysaetos*) or bald eagle (*Haliaeetus leucocephalus*), alive or dead, including any part, nest, or egg (16 U.S.C. § 668[a]). The BGEPA requires consultation with USFWS to ensure that proposed federal actions do not adversely affect bald or golden eagles. Project activities may be required to avoid certain seasons or buffer areas around nesting eagles.

As described in Section 4.8, EO 13112 (Invasive Species) requires federal agencies to prevent the introduction of invasive plant and animal species and provide for their control to minimize the economic, ecological, and human health impacts that invasive species cause. Each state designates invasive species and has adopted regulations regarding the sale, spread, and control of invasive species.

As described in Section 4.8, North Dakota comprises four of EPA's Level IV ecoregions (**Figure 4-1**) and contains several different terrestrial and aquatic habitat types, including prairies, forests, wetlands, rivers, lakes, and developed areas. The 2015 North Dakota State Wildlife Action Plan states that the state supports more than 300 wildlife species (including a variety of birds, mammals, fish, amphibians, reptiles, and invertebrates) and lists 115 of those as species of conservation priority (including those with low and declining populations) (NDGF 2015); these species have the greatest potential to be affected by the action alternatives and are subsequently discussed below.

North Dakota provides habitat for numerous species of birds, including migratory birds protected under the MBTA. There are 47 bird species of conservation priority that may occur within portions of the state, including American bittern (*Botaurus lentiginosus*), marbled godwit (*Limosa fedoa*), Nelson's sparrow (*Ammodramus nelsoni*), canvasback (*Aythya valisineria*), sharp-tailed grouse (*Tympanuchus phasianellus*), upland sandpiper (*Bartramia longicauda*), dickcissel (*Spiza*

americana), Brewer's sparrow (*Spizella breweri*), and whooping crane (*Grus americana*) (NDGF 2015).

Bald eagles (*Haliaeetus leucoephalus*) require habitats that have perching areas and nesting sites and that support an adequate prey base. Bald eagles often occur near large lakes, reservoirs, and rivers, although they are increasingly being found in drier areas that are farther from water sources, such as in farmlands and suburban and urban habitats (USFWS 2024a). Bald eagles have the potential to occur within and around utility projects and are a fairly common to uncommon species in North Dakota depending on the location in the state. Bald eagles are more prevalent in the northeastern part of the state and along the Missouri River (NDGF 2019c) (Appendix C, Figure 1). In North Dakota, golden eagles (*Aquila chrysaetos*) may occur in the southwestern part of the state, generally southwest of the Missouri River (Appendix C, Figure 2); however, they are considered to be an uncommon species in the state. As of 2014, there were 139 active golden eagle nests in the NDGF statewide database of nests. Preferred habitat for golden eagles is open shrubland and grasslands. Golden eagles avoid heavily forested areas but may use woodland/brushland and riparian habitats. Nesting occurs primarily on cliffs, but they may also nest in trees or even near the ground (NDGF 2019d).

There are 21 mammal species of conservation priority that occur within portions of North Dakota, including the Townsend's big-eared bat (*Corhnorhinus townsendii*), black-tailed prairie dog (*Cynomys ludovicianus*), swift fox (*Vulpes velox*), American marten (*Martes americana*), black-footed ferret (*Mustella nigripes*), arctic shrew (*Sorex arcitus*), long-legged bat (*Myotis Volans*), and gray fox (*Urocyon cinereoargenteus*) (NDGF 2015). Some game mammal species that may be found across the state include bighorn sheep (*Ovis canadensis*), elk (*Cervus canadensis*), moose (*Alces alces*), pronghorn (*Antilocapra americana*), white-tailed deer (*Odocoileus virginianus*), mule deer (*Odocoileus hemionus*), American badger (*Taxidea taxus*), bobcat (*Lynx rufus*), fisher (*Pikania pennanti*), and mountain lion (*Puma concolor*) (NDGF 2019e).

There are 22 fish species of conservation priority that have the potential to occur within portions of North Dakota, including but not limited to the blacknose shiner (*Notropis anegenus*), chestnut lamprey (*Ichthyomyzon castaneus*), hornyhead chub (*Nocomis biguttatus*), northern pearl dace (*Margariscus nachtriebi*), pugnose shiner (*Notropis anogenus*), silver chub (*Marcrhybopsis storeriana*), and yellow bullhead (*Ameiurus natalis*).

There are nine reptile species of conservation priority that may occur within portions of North Dakota: false map turtle (*Graptemys pseudogeographica*), northern prairie skink (*Plestiodon septentrionalis*), plains hog-nosed snake (*Heterodon nasicus*), sagebrush lizard (*Sceloporus graciosus*), short-horned lizard (*Phrynosoma hernandesi*), smooth green snake (*Opheodrys vernalis*), smooth softshell turtle (*Apalone mutica*), snapping turtle (*Chelydra serpentina*), and spiny softshell turtle (*Apalone spinifera*). There are two amphibian species of conservation priority that may occur within the state: the Canadian toad (*Anaxyrus hemiophrys*) and the plains spadefoot (*Spea bombifrons*) (NDGF 2015).

There are four insect species of conservation priority that may occur within portions of North Dakota: the Dakota skipper (*Hesperia dacotae*), monarch butterfly (*Danaus plexippus*), poweshiek skipperling (*Oarisma poweshiek*), and Regal fritillary (*Speyeria* sp.) (NDGF 2015).

There are 10 freshwater mussel species of conservation priority that may occur within portions of North Dakota: the black sandshell (*Notropis heterolepis*), creek heelsplitter (*Lasmigona compressa*), creeper (*Strophitus undulatus*), deertoe (*Truncilla truncate*), fragile papershell (*Leptodea fragilis*), mapleleaf (*Quadrula quadrula*), pink heelsplitter (*Potamilus alatus*), pink papershell (*Potamilus ohiensis*), threeridge (*Potamilus ohiensis*), and Wabash pigtoe (*Fusconaia flava*) (NDGF 2015).

As described in Section 4.8, invasive wildlife species are also managed under EO 13112. More than 20 species of aquatic and terrestrial invasive species of concern occur within North Dakota. These include the banded mystery snail (*Vivaparus georgianus*), black carp (*Mylopharyngodon piceus*), blotched snakehead (*Channa maculate*), bullseye snakehead (*Channa marulius*), Chinese mystery snail (*Cipangopaludina chinensis*), faucet snail (*Bithynia tentaculate*), fishhook waterflea (*Cercopagis pengoi*), giant snakehead (*Channa micropeltes*), golden clam (*Corbicula fluminea*), New Zealand mudsnail (*Potamopyrgus antipodarum*), northern snakehead (*Channa argus*), quagga mussel (*Dreissena bugensis*), red swamp crayfish (*Procambarus clarkia*), round goby (*Neogobius melanostomus*), rudd (*Scardinius erythropthqalmus*), ruffe (*Gymnocephalus cernuus*), rusty crayfish (*Faxonius rusticus*), scud (*Amphipoda* sp.), spiny waterflea (*Bythotrephes longimanus*), starry stonewort (*Nitellopsis obtuse*), tubenose goby (*Proterorhinus semilunaris*), and zebra mussel (*Dreissena polymorpha*) (Midwest Invasive Species Information Network 2024).

4.9.1. NO ACTION ALTERNATIVE

Under the No Action Alternative, communities may implement minor utility improvement projects. The areas where these utility projects would occur may provide suitable habitat for some wildlife species. In the short term, construction activity and equipment use in terrestrial habitats may adversely impact wildlife by crushing and trampling wildlife and habitat destruction. Noise disturbance from construction activities could also disrupt wildlife and lead to habitat avoidance. Furthermore, construction within or near aquatic habitats could degrade water quality within aquatic habitats in addition to the direct impacts on aquatic life and habitats from equipment use and dredging or filling activities. Therefore, the No Action Alternative may have negligible to minor short-term adverse impacts on fish and wildlife species.

In the long term, the risk that utilities may be damaged or fail to properly function because of a natural hazard would not be substantively reduced. The risk of flooding and erosion would not be substantially reduced if severe weather events exceed the existing stormwater or wastewater utility capacity, and sediments, pollutants, and contaminants would continue to be transferred into waterways and aquatic habitats. Electric utilities that are above ground and made of combustible materials would continue to be at risk for starting or spreading utility-associated wildfire. In the event of a wildfire, there could be damage to vegetation and terrestrial habitats along with the subsequent establishment of invasive species. Continued utility damage and failure from natural hazards would require repair work, which could also result in construction-related impacts on fish and wildlife,

including crushing and trampling wildlife and habitat destruction. Therefore, there would be a minor to moderate long-term adverse impact on fish and wildlife.

4.9.2. ACTION ALTERNATIVES

General Consequences of the Action Alternatives

Utility improvement projects under the action alternatives include potential disturbance within both previously disturbed and undisturbed areas. Both disturbed and undisturbed areas may provide suitable habitat for some wildlife species. Construction activity and equipment use in terrestrial habitats may adversely impact wildlife by crushing and trampling wildlife and habitat destruction. Noise disturbance from construction activities could disrupt acoustic signals that may hinder the wildlife's ability to hear and avoid predators. Dust from construction activities may coat sensitive plants and insect larvae. However, areas of exposed soil would be covered or wetted to reduce fugitive dust. Additionally, construction noise and visual disturbances could lead to habitat avoidance, which may prevent wildlife from successfully foraging, finding cover, or reproducing. If construction were to occur within or near aquatic habitats, then increased ground disturbance could result in erosion that, in turn, could increase turbidity and sedimentation, which could degrade water quality within aquatic habitats. Construction may also include temporary dewatering activities. Should a project require dewatering or in-water work, impacts on aquatic species would be minimized or mitigated by seasonal restrictions for in-water work as well as adherence to any relevant conditions prescribed in project-specific CWA permits or agency consultations.

Potential vegetation removal associated with construction under the action alternatives could have a minor long-term adverse impact on migratory birds by incrementally decreasing nesting habitat availability within the project area. If vegetation removal were to occur during the bird nesting season, then a take of migratory birds could occur, and the action alternatives would be subject to the prohibitions of the MBTA. The Subapplicant would be responsible for complying with federal and state laws for the protection of birds before initiating work. To the extent feasible, activities involving the removal of vegetation would occur outside of the general bird nesting season for migratory birds in North Dakota, which is April 1 through August 31 for songbirds and January 15 through August 31 for raptors.

If vegetation removal must occur during the general bird nesting season for migratory birds and raptors, the Subapplicant must retain qualified personnel to perform a pre-construction inspection of potential nesting habitat to confirm the absence of active nests belonging to migratory birds and raptors afforded protection under the MBTA. The pre-construction inspection must be performed no more than 7 days prior to the commencement of vegetation removal activities. The results of the pre-construction inspection must be documented by the qualified personnel. If the qualified personnel determines that no active migratory bird or raptor nests are present, the activities would be allowed to proceed without any further requirements. If the qualified personnel determines that an active migratory bird or raptor nest is present, construction activity would not be allowed to occur within 300 feet (500 feet for raptors) of the active nest until the young have fledged from the nest and the nest is confirmed to no longer be active, or as determined by the qualified personnel. The

biological monitor may modify the buffer or propose other recommendations to minimize disturbance to nesting birds.

If bald or golden eagle nests or roost sites are identified in or near a project area, consultation with USFWS would be required to establish appropriate buffers and actions to protect sites and the Subapplicant would be responsible for obtaining an eagle disturbance permit if necessary. Typical mitigation measures include establishing seasonal limits on vegetation clearing activities, retaining nest trees, establishing buffers around nest trees or roosts, and implementing the USFWS Bald Eagle Management Guidelines.

In the long term, utility improvement projects could permanently modify or remove aquatic habitat, including altering the discharge quantity of pipes in streams or constructing a stormwater detention basin. A change of flow in some streams and channels may benefit some aquatic species, yet the same change could be harmful to other aquatic species. Any permanent loss of aquatic habitat would have an adverse effect on aquatic species. The action alternatives may also have long-term adverse effects on terrestrial species associated with ground disturbance and the removal of vegetative cover, which could increase susceptibility to predation and could lead to a loss of forage or prey species. Additionally, ground and vegetation disturbances may degrade the existing habitat through the introduction of noxious weeds and invasive plants, which could increase competition for some wildlife species for forage. Most projects would require disturbed areas to be replanted and BMPs for reducing the susceptibility for disturbed areas to invasive plants and noxious weeds would be implemented. However, for some utility improvement projects, it may not be possible to restore terrestrial habitat back to existing conditions. Trees would not be able to be replanted on top of or under utilities lines and restoration of vegetation within stormwater basins would be limited. Vegetation removal would be considered on a project-specific basis and for any projects that would have major impacts on native species, their habitats, or the natural processes sustaining them, an SEA would need to be prepared. Therefore, the action alternatives would have minor to moderate long-term adverse impact on terrestrial and aquatic wildlife, depending on the species, and location and duration of the project activities.

In the long term, projects would reduce the risk of utilities being damaged or functioning improperly because of a natural hazard. Properly functioning stormwater and wastewater utilities could reduce the risk of flooding, thereby reducing impacts on waterways and aquatic habitat from runoff and pollutants and improving water quality. In addition, the retrofit, replacement, or relocation of electric utilities would reduce the risk of utility-associated wildfires and wildfire damage to vegetation and terrestrial habitats. The action alternatives would reduce the need for utility repairs, thus reducing construction-related impacts on fish and wildlife. Therefore, the action alternative would have a negligible to minor long-term beneficial impact on fish and wildlife species, depending on the species, and location and duration of the project activities.

Replacement Alternative

Because utility replacement projects include the replacement of utility infrastructure, there would be no disturbance to previously undisturbed areas. However, the previously disturbed areas where utility replacement projects would occur may provide suitable habitat for some wildlife species.

These areas may have been disturbed years prior and routine maintenance may not have occurred, which would leave the areas in a more natural state. Because utility replacement activities would occur in previously disturbed areas, habitat fragmentation is not a concern for this alternative. Therefore, with compliance with the MBTA, CWA, BGEPA, and other applicable regulations, and because utility replacement activities would only occur in previously disturbed areas, there would be negligible to minor adverse impacts on fish and wildlife, including migratory birds and eagles, in the short term.

Relocation and Installation Alternative

In previously undisturbed areas, long-term impacts from utility relocation or installation projects may include habitat fragmentation or degradation. These impacts may cause changes in wildlife movement patterns and prevent individuals from successfully foraging, finding cover from predators, or reproducing. This can be especially harmful for smaller prey species, including species of conservation priority, that would be more prone to predation. Because utility relocation or installation projects may take place in previously undisturbed habitats that are suitable for a larger suite of species, there is the possibility of increased adverse effects as compared to utility replacement projects. Therefore, because of compliance with the MBTA, CWA, and other applicable regulations, and because utility relocation and installation activities may occur in previously undisturbed areas, there would be minor to moderate adverse impacts on fish and wildlife, including migratory birds and eagles, in the short and long term, depending on the species, and location and duration of the project activities.

Combination Alternative

Generally, the impacts on fish and wildlife from this alternative would be similar to those described for Replacement, Relocation, and Installation alternatives, as this project type includes a combination of utility replacement, relocation, and/or installation projects.

4.10. Threatened and Endangered Species and Critical Habitat

The ESA of 1973, 16 U.S.C. §§ 1531 through 1544, provides a framework for the conservation of endangered and threatened species and their habitats. The lead federal agencies for implementing the ESA are USFWS and the National Marine Fisheries Service (NMFS). Federal agencies are required to ensure that actions they fund, authorize, or carry out are not likely to jeopardize the continued existence of any listed species (including plant species) or result in the destruction or adverse modification of designated critical habitats for such species. The ESA also prohibits any action that causes a "take" of any listed species. The term "take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, capture, or collect, or to attempt to engage in any such conduct." This section evaluates the alternatives for the potential to impact endangered and threatened species and their habitats that occur within North Dakota, in both the short and long term.

Based on a review of the USFWS Information for Planning and Consultation tool conducted in September 2024, there are eight federally listed species and one species proposed for listing that have the potential to occur within North Dakota. All federally listed or proposed species with the

potential to occur in North Dakota are under USFWS's jurisdiction; no federally listed species under NMFS's jurisdiction have potential to occur in North Dakota (NMFS 2022). All ESA-listed species that may be near the action area are listed in **Table 4.7** (USFWS 2024b) and are briefly discussed below.

Table 4.7. Federally Listed Species with the Potential to Occur Within North Dakota

Common Name	Scientific Name	Status
Mammals		
Gray wolf	*Canis lupis*	Threatened
Northern long-eared bat	*Myotis septentrionalis*	Endangered
Birds		
Piping plover	*Charadrius melodus*	Threatened
Rufa red knot	*Calidris canutus rufa*	Threatened
Whooping crane	*Grus americana*	Endangered
Fishes		
Pallid sturgeon	*Scaphirhynchus albus*	Endangered
Insects		
Dakota skipper	*Hesperia dacotae*	Threatened
Western Regal fritillary	*Argynnis idalia occidentalis*	Proposed Threatened
Flowering Plants		
Western prairie fringed orchid	*Platanthera praeclara*	Threatened

Sources: USFWS 2024b

Designated critical habitat for the Dakota skipper and piping plover (*Charadrius melodus*) occurs in North Dakota (Appendix C, Figure 3 and Figure 4). In addition, designated critical habitat for the poweshiek skipperling occurs in Sargent and Richland counties (Appendix C, Figure 5), but is considered extirpated within North Dakota (NDGF 2019f).

Gray wolf: Gray wolves were once common in North Dakota; however, currently, North Dakota is not within the current known range for the gray wolf (USFWS 2024b). The gray wolf is considered an incidental species in North Dakota and there are no known breeding populations of the gray wolf in the state. The gray wolf is a habitat generalist that needs large ungulates, including elk, white-tailed deer, mule deer, or moose to be present (NDGF 2019g).

Northern long-eared bat: Northern long-eared bats are rare throughout North Dakota. During the active season (spring through fall), they can primarily be found in woodlands, roosting in cavities or under loose bark of trees. No hibernacula (caves) for the northern long-eared bat have been identified within North Dakota. The primary range of the northern long-eared bat in North Dakota is along the Missouri and Little Missouri River valleys in western North Dakota and in northern Bottineau and Rolette counties in the mid-north portion of the state (Appendix C, Figure 6) (NDGF 2019h).

Piping plover: The piping plover is uncommon throughout North Dakota and only occurs within the state from mid-April to August. Suitable breeding and nesting habitat for the piping plover is comprised of exposed, sparsely vegetated shores and islands of shallow alkali lakes and impoundments. Within North Dakota, the primary range for the piping plover is along the Missouri and Little Missouri River valleys in the western portion of the state with other smaller areas spread out through the middle and northwestern part of the state (Appendix C, Figure 7) (NDGF 2019i).

Rufa red knot: The rufa red knot is rare throughout North Dakota and generally occurs as transient species during migration (mid-May and mid-September to October). The observations of rufa red knots in North Dakota are scattered throughout the state. Rufa red knots primarily use marine habitats for nesting and breeding, but have been observed in the Missouri River system, sewage lagoons, and large permanent wetlands in North Dakota (NDGF 2019j).

Whooping crane: Whooping cranes are rare throughout North Dakota and only occur as transient species during migration (April to mid-May and September to early November). During migration, whooping cranes typically use seasonal wetlands and cropland ponds for roosting and feeding. The migratory corridor for the whooping crane in North Dakota includes a large swath of land, mostly in western North Dakota, that generally follows the Missouri River (Appendix C, Figure 8) (NDGF 2019k).

Pallid sturgeon: Pallid sturgeon are rare in North Dakota, with the current range only occurring in the Missouri River and parts of the Yellowstone River in the northwestern part of the state (Appendix C, Figure 9). Within these river systems, pallid sturgeon are generally found along the bottom of fast flowing, turbid water. However, the range of depths used varies seasonally and they may be found in shallower waters in the spring (NDGF 2019l).

Dakota skipper: The Dakota skipper is rare throughout North Dakota with a primary range that only includes the northern and central half of the state (Appendix C, Figure 10). Dakota skippers can be found in two prairie habitat types: moist prairies dominated by bluestem grass species and mesic upland prairies often found on ridges and hillsides that contain bluestem grass species. Purple coneflower is often found in areas that support the Dakota skipper (NDGF 2019m).

Western Regal fritillary: The western Regal fritillary is rare throughout North Dakota with the primary range occurring in the western part of the state (Appendix C, Figure 11) (USFWS 2024d). Regal fritillary are typically found in remnants of tallgrass prairies and other native prairie habitats. Regal fritillary larva rely exclusively on native violets as a food source and areas with high densities of native violets may support both adult and larval Regal fritillaries (NDGF 2019n).

Western prairie fringed orchid: The western prairie fringed orchid can be found only in Ransom and Richland counties in North Dakota (NDGF 2019o). Suitable habitat for the western prairie fringed orchid includes moist tallgrass prairies and sedge meadows. In North Dakota, the western prairie fringed orchid is often found with sedges, reedgrass, and rushes, or where those plants intermingle with bluestem species and switchgrass (USFWS 2024e).

4.10.1. NO ACTION ALTERNATIVE

Under the No Action Alternative, communities may implement minor utility improvement projects. In the short term, construction activity and equipment use in terrestrial habitats may adversely impact listed species by crushing and trampling listed wildlife species and their habitats. Noise disturbance from construction activities could also disrupt listed wildlife species and lead to habitat avoidance. Vegetation removal, sedimentation, and erosion could degrade the quality of or destroy designated critical habitat or suitable habitat for federally listed species. Therefore, the No Action Alternative may have negligible to moderate short-term adverse impacts on threatened and endangered species.

In the long term, the risk that utilities may be damaged or fail to properly function because of a natural hazard would not be substantively reduced. The risk of flooding and erosion would not be substantially reduced if severe weather events exceed the existing stormwater or wastewater utility capacity, and sediments, pollutants, and contaminants would continue to be transferred into waterways and aquatic habitats. Electric utilities that are above ground and made of combustible materials would continue to be at risk for starting or spreading utility-associated wildfire. In the event of a wildfire, there could be damage to vegetation and terrestrial habitats along with the subsequent establishment of invasive species. Continued utility damage and failure from natural hazards would require repair work, which could also result in construction related impacts on listed species, including crushing and trampling listed wildlife species and habitat destruction. Therefore, there would be a minor to moderate long-term adverse impact on threatened and endangered species.

4.10.2. ACTION ALTERNATIVES

General Consequences of the Action Alternatives

Utility projects performed under the action alternatives have the potential to affect federally listed species and their designated critical habitats, which would be subject to the same impacts as those described in Sections 4.8.2 and 4.9.2. However, as discussed in Section 4.10, most listed species are rare in North Dakota or have a very limited range of occurrence. In addition, northern long-eared bats and the listed bird species are only active or present in the state during certain times, during which project construction could likely be avoided. Although the magnitude of the potential effects is expected to vary, based on the listed species expected to be present in a project area, FEMA expects that short-term or long-term impacts would not exceed minor levels because construction activities and operation of the action alternatives would be limited by permit conditions and any recommendations from USFWS resulting from informal or formal consultation. Before implementing any project under the PEA, FEMA would analyze the project location, habitat conditions, USFWS's Information for Planning and Consultation tool, and any available and relevant natural heritage database information. Based on the review, FEMA would determine whether there is a potential for the project to affect federally listed species or designated critical habitat.

FEMA would consult with USFWS under Section 7(a)(2) of the ESA regarding all projects that may affect listed species or designated critical habitats (including newly listed species and critical habitats that were not originally summarized in **Table 4.7**) and would seek concurrence with findings

of not likely to adversely affect, or conduct a formal consultation for findings of likely to adversely affect. If a proposed project is likely to adversely affect a federally listed species, issuance of a biological opinion and incidental take permit by USFWS would be required before project implementation. A tiered SEA would need to be developed if FEMA determines that the Proposed Action is likely to adversely affect a listed species or will adversely modify critical habitat that cannot be resolved through consultations with the USFWS.

As described in Sections 4.8.2 and 4.9.2, in the long term, projects would reduce the risk of utilities being damaged or functioning improperly because of a natural hazard, which could reduce adverse impacts on listed fish and wildlife species and their associated habitat. Therefore, the action alternative would also have the same negligible to minor long-term beneficial impact on threatened and endangered species, depending on the species, and location and duration of the project activities.

Threatened and endangered species are expected to be subject to the same project-specific impacts as other fish and wildlife species; however, based on the listed species expected to be present in the state and the implementation of any recommendations from USFWS, the action alternatives would have minor short-term and long-term adverse impacts on threatened and endangered species.

4.11. Cultural Resources

Section 106 of the NHPA, as amended (54 U.S.C. §§ 300101–307108), requires that federal agencies consider the potential effects of proposed actions (i.e., an undertaking) on cultural resources. Cultural resources are defined as precontact or historic archaeology sites, historic standing structures, historic districts, objects, artifacts, cultural properties of historic or traditional significance—referred to as Traditional Cultural Properties—that may have religious or cultural significance to federally recognized Indian tribes (tribes), or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons.

Cultural resources listed, eligible for listing, or potentially eligible for listing in the National Register of Historic Places (NRHP) or their state equivalent are subject to protection from adverse impacts resulting from a federally funded undertaking.

Pursuant to 36 CFR § 800.4(a)(1), the Area of Potential Effects (APE) is defined as the geographic area(s) within which the undertaking may directly or indirectly affect cultural resources. Within the APE, impacts on cultural resources are evaluated for both historic structures (aboveground cultural resources) and archaeology (belowground cultural resources).

In addition to the NHPA, FEMA must also comply with other federal laws that relate to historic and cultural resources:

- The Archaeological and Historic Preservation Act of 1974 provides for the survey, recovery, and preservation of significant scientific, precontact, archaeological, or paleontological data

when such data may be destroyed or irreparably lost because of a federal, federally licensed, or federally funded (in part or whole) project.

- The American Indian Religious Freedom Act of 1978, 42 U.S.C. § 1996, which provides for the protection and preservation of American Indian sites, possessions, and ceremonial and traditional rites.

- The Archaeological Resources Protection Act of 1979 (16 U.S.C. § 470aa et seq.) which provides archeologists and law enforcement with tools to protect archeological resources on public lands and Native American lands.

- The Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. § 3001 et seq.) that mandates the protection and return of Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony.

North Dakota holds a rich history of Native American and Euro-American precontact and historic activity as both a transportation corridor and an area of human settlement spanning thousands of years. Waterways are often associated with historic and precontact, short- and long-term settlements and early-contact-period settlements, including Native American settlements and military, trade, and navigation activities. North Dakota is rich in archaeological remains of precontact and historic villages. Known today as the Mandans, Hidatsas, and Arikaras (State Historical Society of North Dakota, accessed 2024), these peoples lived in these communities that ranged from 300 to 2,000 or more residents from the 1200s until the 1800s. Hundreds of precontact village sites are located along the Missouri River. Together, these villages show the rich history of farming and bison hunting cultures that once occupied the Missouri River valley.

This way of life eventually gave way to EuroAmerican explorers, traders, and settlers. Among them, Meriwether Lewis and William Clark spent the winter of 1804 to 1805 near the last five independent Mandan and Hidatsa settlements at the Knife River and the ruins of older Mandan villages near the Heart River (State Historical Society of North Dakota, accessed 2024). Waterways are also rich in the remains left by these settlements and activities. Common archaeological and historic sites include buildings, estates, mills, mining and hunting sites, fort complexes, fur trade outposts, battlegrounds, seawalls, and docks. More recently developed infrastructure features include canals, ornamental masonry retaining walls, bridges, and dams. These resources can be NRHP-eligible individually or they may contribute to a historic district or landscape. Stream banks and the upland areas associated with utility services are often archaeologically sensitive as well, with a high likelihood to contain precontact sites in undisturbed soil.

4.11.1. CONSULTATION PROTOCOLS

FEMA has an executed NHPA Programmatic Agreement with the North Dakota State Historic Preservation Officer (ND SHPO), North Dakota Department of Emergency Services, and interested tribes in North Dakota (2021). In addition, FEMA has executed Programmatic Agreements with the following tribes in North Dakota: Sisseton-Wahpeton Oyate Tribe (2016), Spirit Lake Tribe (2017),

and Turtle Mountain Chippewa (2017). These programmatic executed documents stipulate roles and responsibilities, exempt certain undertakings from Section 106 review, establish protocols for consultation, facilitate identification and evaluation of historic properties, and streamline the assessment and resolution of adverse effects to historic properties.

For any tribe that has assumes the Section 106 responsibilities of the ND SHPO for activities on tribal land, pursuant to Section 101(d)(2), the Tribal Historic Preservation Officer (THPO) is the official representative to ensure a project complies with Section 106 of the NHPA. Therefore, FEMA consults with the THPO instead of the SHPO regarding undertakings occurring on, or affecting historic properties on, tribal lands. Non-federally recognized tribes can participate in the Section 106 process as interested parties.

Five tribes have formally assumed the responsibilities of the ND SHPO for purposes of Section 106 compliance on their tribal lands in North Dakota and should be consulted for undertakings occurring on, or affecting historic properties on, those tribal lands (ND SHPO Guidelines Manual for Cultural Resource Inventory Projects 2020; National Association of Tribal Historic Preservation Officers 2024). This includes:

- The THPO for the Fort Berthold Indian Reservation is in the City of New Town, North Dakota. This THPO has jurisdiction over all lands located within the Fort Berthold Indian Reservation, which encompasses portions of Dunn, McKenzie, McLean, Mercer, Mountrail, Ward, and Williams counties, North Dakota.

- The THPO for the Spirit Lake Nation Reservation is in the City of Fort Totten. This THPO has jurisdiction over all lands located within the Spirit Lake Nation Reservation, which encompasses portions of Benson, Eddy, Nelson, and Ramsey counties, North Dakota.

- The THPO for the Sisseton-Wahpeton Oyate Indian Reservation is in the City of Agency Village, South Dakota. This THPO has jurisdiction over all lands located within the Sisseton-Wahpeton Oyate Indian Reservation, which encompasses portions of Richland and Sargent counties, North Dakota.

- The THPO for the Standing Rock Sioux Indian Reservation is in the City of Fort Yates, North Dakota. This THPO has jurisdiction over all lands located within the Standing Rock Sioux Indian Reservation, which encompasses all of Sioux County, North Dakota.

- The THPO for the Turtle Mountain Indian Reservation is in the City of Belcourt, North Dakota. This THPO has jurisdiction over all lands located within the Turtle Mountain Indian Reservation, which encompasses a portion of Rolette County, North Dakota.

To acknowledge and honor the sovereignty of tribal nations, FEMA regularly consults with tribal governments to ensure that FEMA policies and programs address tribal needs. As directed by EO 13175, Consultation and Coordination with Indian Tribal Governments, and stated in the 2019 FEMA Consultation Policy, “FEMA tribal consultation is the process for communicating and

collaborating with federally recognized Indian tribal governments and Alaska Native Corporations (… collectively referred to as "tribal governments") to exchange information, receive input, and consider their views on actions that have tribal implications."

FEMA Region 8 regularly consults with all federally recognized Native American tribes with jurisdictional lands in North Dakota. In addition, FEMA consults with federally recognized tribes that reside outside of North Dakota but have areas of ancestral interest within the region, including the neighboring states of South Dakota, Montana, Wyoming, Utah, and Colorado.

Consultation would be conducted for each project reviewed under this PEA and would follow the regulations and guidance that are in place at the time of review. For each project, FEMA would update the list of tribes, interested parties, and contacts to be consulted with to assure that notice of an undertaking and requests for comment under Section 106 are appropriately addressed to all federally recognized Indian Tribes believed to have current or ancestral interest in each undertaking's location. FEMA would consult resources such as the tribal nations' websites and National Park Service and the Bureau of Land Management–maintained tribal directories for information. In addition, each notification lists the federally recognized tribes being contacted and requests notice of any other tribes that may have an interest in the undertaking.

As of September 2024, there are 465 historic properties listed in the NRHP in North Dakota. The majority (approximately 70 percent) of the historic properties are categorized as buildings (330) followed by archaeological sites (53), districts (48), structures (30), and objects (4) (National Park Service 2024). **Table 4.8** lists the NRHP properties in North Dakota.

Table 4.8. National Register Historic Properties in North Dakota

Historic Properties by Category	Count	Percent
Building	330	70.97%
Archaeological Site	53	11.40%
District	48	10.32%
Structure	30	6.45%
Object	4	0.86%
Total	**465**	**100.00%**

Source: National Register Database and Research 2024

4.11.2. NO ACTION ALTERNATIVE

Under the No Action Alternative, there would be no FEMA action; therefore, there would be no effect on historic and cultural resources from FEMA-funded grant activities. However, under the No Action Alternative, minor utility improvement projects would be completed in limited areas. In addition, continued utility damage and failure from natural hazards would require repair work. Because these minor measures and repairs would not necessarily be constructed with federal funding, there may be no Tribal consultation and only compliance with applicable state law to account for the potential

identification and protection of cultural resources. However, these projects and repairs would likely be smaller in scale and within existing utility infrastructure and disturbed areas. Therefore, the No Action Alternative would have negligible to minor, short-term, adverse impacts on historic and cultural resources.

Under this alternative, the risk that utilities may be damaged or fail to properly function because of a natural hazard would not be substantively reduced. Thus, in the long term, cultural resources, such as archaeological sites and cultural artifacts, would continue to be exposed to the impacts flooding, wildfire, slope failure, ground collapse, and erosion that may be associated with damaged or vulnerable utilities. Therefore, there would be a minor to moderate, long-term, adverse impact on historic and cultural resources.

4.11.3. ACTION ALTERNATIVES

General Consequences of the Action Alternatives

All action alternatives have the potential to impact aboveground historic architectural resources, both physically and visually, as well as belowground archaeological sites. Archaeological resources have a high potential of being impacted by excavation, construction staging, and site access activities that disturb previously undisturbed soils. Projects that include construction, excavation, trenching, directional boring, placement of temporary crossings, and staging areas may affect character-defining elements of a historic property, if present.

The replacement, relocation, and/or installation of utilities—including in-kind repairs, minor upgrades, and small-scale realignments—within previously disturbed soil of rights-of-way or utility corridors are generally considered as activities with minimal potential to impact historic and cultural resources. These activities fall under the Second Tier Allowances outlined in Region 8's Programmatic Agreement, unless they are near known archaeological sites or within the viewsheds of historic districts that are eligible for or listed in the NRHP. Additionally, directional boring for new or replacement service lines, involving boring or slit trenches in previously disturbed soils of rights-of-way or utility corridors, is deemed to have minimal impact on historic and cultural resources, unless it occurs within the boundaries of NRHP—listed, eligible, or unevaluated archaeological sites.

However, proposed utility projects involving replacement, relocation, or installation within areas that are known to contain NRHP-listed, eligible, or unevaluated archaeological sites, or NRHP-eligible or listed historic properties, may have the potential to affect historic or cultural resources. Before the start of a project, FEMA and the Subapplicant would comply with the NHPA by identifying the potential for resources to occur in the project area, reviewing any programmatic allowances defined in the applicable executed Programmatic Agreements, and completing standard Section 106 review by consulting with the appropriate parties. To comply with the NHPA, project-specific consultation with the ND SHPO or THPO would be necessary for utility improvement projects and any identified connected actions that exceed the applicable programmatic allowances covered by the Proposed Action. FEMA would conduct an individual Section 106 consultation for each project

application (in accordance with the NHPA and any applicable Programmatic Agreement) before the grant is awarded.

The Section 106 process requires consideration of the potential for known and unknown resources to be affected, including a good faith effort to identify all resources within a project area. FEMA would identify the APE for each project and determine whether there were any historic or cultural resources potentially present within the project area. This identification would be conducted in consultation with the ND SHPO and the THPO, and any interested parties, including tribes, as appropriate. The APE would consider the horizontal and vertical area of disturbance to account for any excavation and to encompass any access and staging areas required to implement the project. Field surveys or architectural assessments may be needed to determine if resources are present, particularly if proposed utility projects include expansion and excavation outside of previous utility alignments, areas of new ground disturbance, and in areas determined to have high archaeological sensitivity.

To minimize potential impacts on cultural resources, low-impact equipment should be used to cross intact landscapes to access project areas to the extent practicable (e.g., rubber-tired vehicles and equipment). Construction, excavation, trenching, and directional boring should be limited to the minimum required depth and avoid natural cultural resource-bearing strata, if possible. Existing roads and access points should be used to the maximum extent possible to limit construction-related land clearing and impacts from heavy machinery. If new access roads or staging areas are required, those areas would be surveyed for the presence of cultural resources before construction begins.

If resources are identified as potentially present, then FEMA would determine whether the resource could be affected by the proposed undertaking and would consult with the ND SHPO or THPO and other potentially interested parties, as appropriate on potential effects, and any avoidance or mitigation measures proposed. If any adverse effects are identified, FEMA would consult on any identified mitigation measures, as appropriate.

Inadvertent discovery protocols would be applied as a mitigation measure to any project that proposes ground-disturbing activities, regardless of how minor the disturbance may appear. Inadvertent discovery protocols specify that if archaeological deposits, including any Native American properties, stone tools, bones, or human remains, are uncovered, all work in the vicinity of the discovery must be halted immediately, and all reasonable measures must be taken to avoid or minimize harm to the finds. All archaeological resources would be secured, and the Subapplicant would restrict access to the sensitive area. The Subapplicant would inform FEMA immediately of such finds, and FEMA would consult with the SHPO or THPO, as appropriate. Work in sensitive areas would not resume until consultation is complete and until FEMA determines that the appropriate measures have been taken to ensure project compliance with the NHPA.

Through Section 106 consultation with the ND SHPO or THPO, and via the application of project--specific mitigation measures developed through the consultation process, potential effects to aboveground and belowground historic properties and subterranean cultural resources would be assessed as a negligible to moderate adverse impact in both the short and long term.

A tiered SEA would be required for a project for which FEMA makes an Adverse Effect determination that is not resolved through consultations with the SHPO, THPO, and any additional consulting parties.

In the long term, utility projects under the action alternatives would reduce the risk that utilities may be damaged or fail to properly function because of a natural hazard. The reduced risk of flooding, wildfire, slope failure, ground collapse, and erosion associated with damaged or vulnerable utilities would help protect cultural resources, such as archaeological sites and cultural artifacts. The action alternatives would result in negligible to moderate long-term beneficial impacts on cultural resources, depending on the project type and location.

4.12. Environmental Justice

EO 14096, Revitalizing Our Nation's Commitment to Environmental Justice for All, defines Environmental Justice (EJ) as the just treatment and meaningful involvement of all people, regardless of income, race, color, national origin, Tribal affiliation, or disability, in agency decision-making and other federal activities that affect human health and the environment. EO 14096 builds upon EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which requires agencies to identify and address any disproportionately high and adverse human health or environmental effects its activities may have on people of color or low-income populations. The EPA's Environmental Justice Screening Tool (EJ Screen), which was used to complete this analysis, defines people of color as all people other than non-Hispanic white-alone individuals, and low-income persons as those whose household income is less than or equal to twice the national poverty threshold (EPA 2023b). EJ Screen also presents 13 EJ Indexes that provide a measure of how environmental factors may be affecting EJ populations within an area.

In accordance with the FEMA EO 12898 Environmental Justice: Interim Guidance for FEMA EHP Reviewers, EJ populations are defined by demographic indicators using the following criteria:

- Population of people of color and/or low-income populations within the study area equals or exceeds the 50th percentile compared to the state average
- One or more of the 13 EJ Indexes for the study area equals or exceeds the 80th percentile compared to the state average

The EJ analysis is focused at the local level (i.e., census tract or block group). The local area in the analysis should identify where project-related impacts would occur, potentially causing an adverse and disproportionately high effect on neighboring people of color or low-income populations.

A summary of people of color and low-income populations within North Dakota is shown in **Table 4.9**. For each proposed project, the demographic characteristics and environmental indicators for the adjacent populations would need to be investigated to determine whether an EJ population is present, and the potential for disproportionately high and adverse impacts would need to be

evaluated. Specific project areas may have higher percentiles of EJ indicators when compared to the state.

Table 4.9. North Dakota Demographic Indicators

Demographic Indicator	Percentage
People of Color	17%
Low-Income Population	38%

Source: U.S. Census Bureau 2023

4.12.1. NO ACTION ALTERNATIVE

Under the No Action Alternative, communities may implement some minor utility improvement projects. In addition, continued utility damage and failure from natural hazards would require repair work. Temporary construction activities from these minor efforts and repairs may result in noise, traffic, and air quality impacts. These short-term temporary impacts may adversely affect EJ populations but would be unlikely to result in disproportionate adverse effects. The location of the work would be constrained by the location of the utility system, and construction impacts would likely affect all populations within the project area equally. The risk of utility failure or disruption from natural hazards would not be substantially mitigated under the No Action Alternative, potentially leaving communities without services and vulnerable to future natural hazards. The potential for disproportionate adverse impacts would vary widely by the location, and the lack of resilient utility systems could disproportionally affect EJ populations. Therefore, potential impacts on EJ populations would range from none to moderate over the long term.

4.12.2. ACTION ALTERNATIVES

General Consequences of the Action Alternatives

FEMA anticipates that none of the action alternatives would have disproportionately high and adverse long-term impacts on EJ populations. For each project location, FEMA would consider the scope of work and location to identify potential impacts on communities of concern. Short-term adverse impacts would primarily include temporary increases in traffic, air emissions, and noise associated with vehicles and heavy equipment use during construction. Rerouting of traffic is possible during construction, which could temporarily increase traffic within EJ neighborhoods.

FEMA anticipates that construction of the action alternatives would have negligible to minor impacts for projects located in communities of concern during construction. If a project would have the potential to affect EJ populations disproportionately and adversely, then an SEA would be required. If EJ populations are present within a project area and there would be adverse impacts, then the Subapplicant would develop public outreach efforts and engagement strategies to effectively engage these populations about the proposed project and identify mitigation measures.

In the long term, the risk that utilities may be damaged or fail to properly function because of a natural hazard would not be substantively reduced. Populations within the project area would see a reduction in the risk of the loss or disruption of utility services from natural hazards under the action alternatives. Therefore, there would be a minor to moderate beneficial impact on EJ populations in the project vicinity. Additionally, the benefits of action alternatives would be consistent with the PR&G guiding principles on sustainable economic development and environmental justice.

4.13. Hazardous Materials

Hazardous materials and wastes are regulated under several federal laws, including 40 CFR Part 260; the Resource Conservation and Recovery Act of 1976; the Solid Waste Act; the Toxic Substances Control Act; the Comprehensive Environmental Response, Compensation, and Liability Act, as amended by the Superfund Amendments and Reauthorization Act; and the CAA of 1970. Occupational Safety and Health Administration standards under the Occupational Safety and Health Act seek to minimize adverse impacts on worker health and safety (29 CFR Part 1926). Evaluating hazardous substances and wastes includes consideration of whether any hazardous material would be generated by the proposed activity or if any already exists at or in the general vicinity of the site (40 CFR § 312.20).

Hazardous materials may be encountered over the course of a project, or they may be generated by the project activities. To determine the types of hazardous waste facilities that exist within North Dakota, a search for Superfund sites, Toxic Release Inventory sites, industrial water dischargers, hazardous facilities or sites, and multiactivity sites was conducted using EPA's NEPA Assist website (EPA 2024f). According to the database, North Dakota has 299 Brownfields, 176 Toxic Release Inventory Sites, and 1,683 Resource Conservation and Recovery Act Corrective Actions. As outlined in the Hazard Mitigation Assistance Program and Policy Guide (FEMA 2024b), projects that include site remediation of hazardous materials are not eligible for funding under the Hazard Mitigation Assistance Program.

4.13.1. NO ACTION ALTERNATIVE

Under the No Action Alternative, communities may implement minor utility improvement projects, which would introduce the risk of oil and fuel leaks from equipment during construction and the potential use or exposure of contaminated fill and materials. However, minor utility improvement projects would be required to conform to local, state, and federal regulations and standards. Equipment would be inspected to monitor for leaks and stored at appropriate staging areas. Therefore, construction of these projects would have a negligible to minor, short-term, adverse impact from hazardous materials.

In the long term, the risk that utilities may be damaged or fail to properly function because of a natural hazard would not be substantively reduced. The risk of flooding and erosion would not be substantially reduced if severe weather events exceed the existing stormwater or wastewater utility capacity, and could continue to threaten exposure of hazardous material sites or release hazardous materials into the environment within or near the project area. Contaminated materials at hazardous

material sites could be carried by floodwaters and subsequently lead to the contamination of soil and water within the project area and vicinity. Electric utilities that are above ground and made of combustible materials would continue to be at risk for starting or spreading utility-associated wildfire. In the event of a wildfire, hazardous materials sites could be directly impacted, potentially releasing contaminants into the ground, water resources, or to the air. In addition, continued utility damage and failure from natural hazards would require repair work, which would result in the risk of leaks from equipment and use or exposure of contaminated fill and materials associated with construction activities. Therefore, the No Action Alternative could result in negligible to minor, long-term, adverse impacts related to hazardous materials.

4.13.2. ACTION ALTERNATIVES

General Consequences of the Action Alternatives

During construction, there would be a minor risk for leaks of oils, fuels, and lubricants from construction equipment. Any fill brought in from outside the project site would need to come from a licensed or permitted source and would be free of contaminants. There is also a potential for construction to expose unknown contaminated materials as a result of excavation and removal of soil and construction debris from the project area. FEMA would review the databases of known contaminated sites during project reviews to confirm that there would not be more than a minor potential for people and the environment to be exposed to hazardous materials. In addition, the project would have to conform to local, state, and federal regulations and standards. With the implementation of the BMPs listed below, the action alternatives would have negligible to minor, short-term, adverse impacts related to hazardous materials.

- Any hazardous and contaminated materials discovered, generated, or used during construction of the action alternatives would be disposed of and handled by the Subapplicant in accordance with applicable federal, state, and local regulations.

- Construction equipment would be kept in proper working order. Any equipment to be used above, in, or within 100 feet of surface water would be inspected daily for fuel and fluid leaks, consistent with 29 CFR 1926.1412(d). Any leaks would be promptly contained and cleaned up, as required by 40 CFR 450.21(d)(3), and the equipment would be repaired.

- Any imported fill used at the project site would meet state and local regulations for clean fill. Fill material discharged below the ordinary high-water mark of a stream or into a wetland would require a Section 404 permit and must be free from hazardous materials, as determined by 40 CFR 230.60(b).

- In the event of an inadvertent spill, the Subapplicant would immediately contact the appropriate regulatory agency, or other contact listed on the Subapplicant's NPDES permit, if applicable. State or local requirements that may necessitate reporting of spills or other prohibited discharges to local emergency response, public health, or drinking water supply agencies would also be followed.

In the long term, some utility improvement projects could involve the storage and use of hazardous chemicals, such as the use of chlorine at wastewater treatment plants and water treatment plants. However, all chemical storage and handling would comply with local, state, and federal regulations. Therefore, there would be negligible to minor adverse long-term impacts under the action alternatives.

Utility projects under the action alternatives would reduce the risk that utilities may be damaged or fail to properly function because of a natural hazard. The implementation of stormwater and wastewater utility improvement projects would reduce the risk of flooding and protect hazardous sites in the vicinity of facilities from flooding and erosion damage. In addition, the retrofit, replacement, or relocation of electric utilities would reduce the risk of utility-associated wildfires and release of contaminants into the ground, water resources, or in the air. The action alternatives would reduce the need for utility repairs, thus reducing the risk of oil and fuel leaks from equipment during construction and the potential use or exposure of contaminated fill and materials. Therefore, the action alternatives would have long-term, minor to moderate, beneficial effects.

4.14. Noise

This section evaluates the alternatives for the potential to generate noise, in both the short and long term. Noise is regulated at the federal level by the Noise Control Act of 1972, 42 U.S.C. §§ 4901, et seq., and is defined as undesirable sound. Noise standards developed by EPA (1974) provide a basis for state and local governments' judgments in setting local noise standards. Local governments often implement noise ordinances that limit excessive noise, such as time limits on construction work.

Sound is most commonly measured in decibels on the A-weighted scale (a scale based on the range of sounds that the human ear can hear); it is expressed as dBA. The day-night averaged sound level is an average measure of sound for a 24-hour period expressed in dBA. It takes into account the volume of each sound incident, the number of times each incident occurs, and the time of day each incident occurs (nighttime sound being weighted more heavily because it is assumed to be more disruptive to the community). Federal agencies accept the day-night averaged sound level descriptor as a standard for estimating sound impacts and establishing guidelines for compatible land uses.

Sounds that disrupt normal activities or otherwise diminish the quality of the environment are considered noise. Noise events that occur during the night (e.g., 10 p.m. to 7 a.m.) are more annoying than those that occur during regular waking hours (e.g., 7 a.m. to 10 p.m.). Assessment of noise impacts includes consideration of the proximity of the noise sources to sensitive receptors. A sensitive receptor is defined as an area of frequent human use that would benefit from a lowered noise level.

Typical sensitive receptors in developed areas include residences, schools, churches, hospitals, and libraries. In more sparsely developed areas, noise-sensitive receptors would include recreational areas (e.g., parks, campgrounds, water access sites, trails) and Tribal Nation properties of religious and cultural significance. Sensitive recreational areas are areas that rely on quiet settings as an

essential part of their character. Typical noise sources in residential or recreational areas are associated with climatic conditions (wind, rain), transportation (traffic on roads, airplanes), and life sounds (people talking, barking dogs, children playing, yard maintenance).

North Dakota has a wide range of noise environments and individual project areas may include noise-sensitive receptors such as libraries, schools, parks, or residential areas. Because most projects would be along public ROW and within developed areas, there would likely be some human use near each project area. However, some projects may occur in more remote area and would have limited impact on noise-sensitive receptors.

4.14.1. NO ACTION ALTERNATIVE

Under the No Action Alternative, communities may implement minor utility improvement projects, which would have short-term, minor, and adverse noise impacts from construction activities.

The utilities within the project area would still be subject to the risk of failure, and continued natural hazards could result in damage to utilities and service disruptions. Construction activities to repair utilities may follow, resulting in minor short-term increases in noise levels from equipment use and potential detours. These activities may occur near sensitive receptors and result in adverse impacts. Any construction work would comply with local noise ordinances that regulate the hours of construction. Therefore, long-term noise impacts would be intermittently minor and relatively short in duration from both the construction of minor utility projects and from the repair of utilities affected by natural hazards.

4.14.2. ACTION ALTERNATIVES

General Consequences of the Action Alternatives

Construction activities associated with the action alternatives would temporarily increase noise levels in each project vicinity, causing minor short-term, adverse impacts on the ambient noise levels in the project area. Common equipment used for construction would include excavators, dump trucks, dozers, and other heavy equipment, as needed. Minor traffic noise would also be produced by construction vehicles and trucks arriving and departing from the project area. If detours are required, traffic could be rerouted, resulting in an increase in vehicle noise in the detour areas. Construction activities would be limited to allowable construction noise hours consistent with local noise ordinances and equipment used would meet applicable local, state, and federal noise control regulations. All construction equipment would be well-maintained, have sound-control devices no less effective than those provided on the original equipment, and have muffled exhaust. Therefore, the action alternatives would have negligible to minor short term adverse effects related to noise.

Following construction, most project types would not be expected to generate any increases in traffic or create new permanent noise sources. However, some projects may include new elements such as larger pumps or backup generators at pump stations or new processes at treatment plants. However, all noise would be attenuated consistent with local noise control ordinances. Therefore, operation of the action alternatives may have a negligible, long-term, adverse impact on noise.

The action alternatives would reduce the risk of utility and infrastructure damage, thereby indirectly reducing future construction activities and noise associated with repairs. Therefore, operation of the action alternatives would have a negligible, long-term, beneficial impact on noise.

4.15. Transportation

This section evaluates the alternatives for the potential to impact traffic and transportation, in both the short and long term.

The U.S. Department of Transportation (USDOT) Federal Highway Administration has jurisdiction over the National Highway System, which includes the Interstate Highway System as well as other roads important to the nation's economy, defense, and mobility. The North Dakota Department of Transportation (NDDOT) is responsible for constructing and maintaining interstate highways, U.S. routes, and state roads in North Dakota. NDDOT also administers federal highway funds provided to cities, towns, and counties, and supports and provides financial assistance to public transit systems, freight and passenger rail, and port facilities. Local cities, counties, and towns/townships are responsible for the roadways that are not Interstate highways, U.S. routes, or state roads; and tribal roads are under the jurisdiction of the appropriate tribal nation (USDOT 2016). According to the Bureau of Transportation Statistics, North Dakota has 88,050 miles of highways, roads, and streets and 4,355 bridges (USDOT 2020).

The U.S. Department of Transportation Federal Railroad Administration regulates most railroad operational procedures, including highway-railroad crossing signals, train speeds, train horn use, and track condition. The NDDOT has minimal regulatory jurisdiction over rail operations or service but can provide direction to the appropriate agency or railroad representative. North Dakota has 3,287 miles of freight railroad (USDOT 2020).

4.15.1. NO ACTION ALTERNATIVE

Under the No Action Alternative, communities may implement minor utility improvement projects that would have negligible to minor, short-term, adverse impacts on traffic if lane or road closures or detours occurred while the projects were being constructed.

In the long term, the minor utility improvement projects would not substantially reduce the risk that utilities may be damaged or fail to properly function because of a natural hazard. The risk of flooding would not be substantially reduced if severe weather events exceed the existing stormwater or wastewater utility capacity, which could cause flooding of roadways making them hazardous or impassible. Electric utilities that are above ground and made of combustible materials would continue to be at risk for starting or spreading utility-associated wildfire. In the event of a wildfire, wildfire may encroach upon roadways and wildfire smoke may inhibit the ability to see roadways clearly. In addition, continued utility damage and failure from natural hazards would require repair work, which could result in construction-related lane or road closures or detours. Depending on the level of service of the infrastructure, the No Action Alternative could have negligible to minor long-term adverse impacts on traffic and transportation.

4.15.2. ACTION ALTERNATIVES

General Consequences of the Proposed Action

During construction, the action alternatives would result in minor temporary increases in traffic as materials and equipment are mobilized to project sites. Utility improvement projects away from or adjacent to roadways would have a limited impact on traffic. However, temporary lane or road closures or detours may be required during construction for utility projects that would occur within an existing roadway. If lane or road closures and detours are required during construction, traffic mitigation measures, such as the installation of clear detour signage or flaggers, would be required. Traffic management plans would typically aim to maintain at least one lane of traffic open at all times during construction. If detours are required, traffic could be rerouted, thus increasing traffic levels in the detour area. Thus, there would be minor, short-term, adverse impacts on traffic in and near the project site.

In the long term, utility projects under the action alternatives would reduce the risk that utilities may be damaged or fail to properly function because of a natural hazard. The implementation of stormwater and wastewater improvement projects would reduce the risk of flooding along the ROW, thus reducing the likelihood of closure of the transportation infrastructure because of future storm events and repairs. In addition, the retrofit, replacement, or relocation of electric utilities would reduce the risk of utility-associated wildfires and the encroachment of wildfire and wildfire smoke. The action alternatives would reduce the need for utility repairs, thus reducing the risk of land or road closures during repairs. Therefore, the action alternatives would have minor, long-term, beneficial impacts on traffic under the action alternatives.

4.16. Public Services and Utilities

This section evaluates the alternatives for the potential to impact public services and utilities, in both the short and long term. Utility infrastructure in the project area may include natural gas lines, electricity infrastructure, telecommunications, and potable water, wastewater, and stormwater utilities. Electricity and telecommunications are often provided to communities through private suppliers. Water and wastewater facilities are generally managed, owned, and operated by local municipalities. Rural project areas are often serviced by private wells and septic systems instead of public utilities. The North Dakota Public Service Commission regulates electric and gas utilities in the state and the North Dakota Department of Water Resources manages and develops the state's water resources.

Public safety services include local law enforcement agencies, fire departments, and emergency medical services. Emergency response time standards frequently exist in contractual obligations between communities and emergency service organizations. As a result, there may be variation in the standards between one community and another. Most emergency response teams use roads and sometimes air transportation to reach affected people and communities. Public facilities (such as schools, hospitals, and parks) exist throughout North Dakota and may be near some project areas. Schools and hospitals are more likely to be within developed areas than undeveloped areas.

4.16.1. NO ACTION ALTERNATIVE

Under the No Action Alternative, communities may implement minor utility improvement projects and construction may result in minor interruptions to utilities and potential lane or road closures that may impede emergency services. Interruption of utility service and road closures would follow all local and state requirements to ensure minimal impact on these services. Therefore, there would be a negligible to minor, short-term, adverse impact.

Under the No Action Alternative, communities may implement minor utility improvement projects, but they would not constitute the same level of risk reduction as the action alternatives described in this PEA. Flooding, strong winds, wildfire, slope failure, ground collapse, and erosion could damage utilities and result in downed power and telecommunication lines, overwhelmed stormwater systems, and interruptions in water and sewer treatment or the loss of pipelines. Interruptions could last hours or be more extensive and last days while repairs are underway. Stormwater-related flooding and utility-associated wildfires could also threaten public facilities, such as schools and parks, resulting in damage and closures. In addition, continued utility damage and failure from natural hazards would require repair work, which could also result in construction-related utility interruptions. Therefore, under the No Action Alternative, there would be long-term minor to moderate adverse impacts on public services and utilities depending on the severity and extent of the damage.

4.16.2. ACTION ALTERNATIVES

General Consequences of the Proposed Action

Utilities in the project area, including power lines, gas lines, telecommunication lines, water, and sewer pipelines, may be temporarily shut off during construction of the action alternatives. Work may also require temporary lane or road closures and detours, which could impact the response times of emergency services; although, in most cases, at least one lane would be kept open around the construction zone (as discussed in Section 4.15). As discussed in Section 4.15.2, detour signage and flaggers would be used to redirect traffic to other routes, which may result in minor increases in traffic on alternative routes. This minor increase in traffic could result in delays in emergency response times. Therefore, the action alternatives would have a negligible to minor impact on emergency services. If utilities or public facilities need to be temporarily shut off during construction, the Subapplicant would follow state and local regulations and coordinate with utilities and public services regarding shutdown procedures and notifications. Any utilities that are abandoned in place during construction would be decommissioned to state and local standards. Thus, there may be negligible to minor short-term adverse impacts on utilities and public services with implementation of BMPs.

In the long term, utility projects under the action alternatives would reduce the risk that utilities may be damaged or fail to properly function because of a natural hazard. The action alternatives would reduce the need for utility repairs, thus reducing utility interruptions during repairs. In the long term, the action alternatives would have minor to moderate benefits on public services and utilities by reducing the risk of utility damage from natural hazards and the associated loss or interruption of

services. In addition, the action alternatives would provide minor long-term benefits on public services by reducing the risk of stormwater-related flooding and utility-associated wildfires.

4.17. Summary of Effects and Mitigation

Table 4.10 provides a summary of the potential environmental effects from implementing the action alternatives, any required agency coordination efforts or permits, and any applicable proposed mitigation or BMPs.

Table 4.10. Summary of Impacts and Mitigation

Resource	No Action Impacts	Proposed Action Impacts	Agency Coordination or Permits	Mitigation/BMPs
Topography and Soils	The No Action Alternative would have minor short-term adverse impacts and minor to moderate long-term adverse impacts on soil and topography.	The action alternatives would have minor short-term adverse impacts and negligible to moderate long-term benefits on soil and topography. The Relocation Alternative and Installation Alternative may have minor long-term adverse impacts on farmland soils.	Coordination with NRCS; Farmland Conversion Impact Rating Form	• Adhere to BMPs from permits and SWPPP.
Air Quality	The No Action Alternative would have minor short-term and long-term adverse impacts on air quality.	The action alternatives would have negligible to minor short-term adverse impacts and negligible to moderate long-term beneficial impacts on air quality.	N/A	• Subapplicants must adhere to all EPA, state, and local emission standards. • Vehicle and equipment runtimes would be kept to a minimum.
Climate	The No Action Alternative would have minor short-term and long-term adverse impacts on climate.	The action alternatives would have negligible to minor short-term adverse impacts and negligible to moderate long-term beneficial impacts on climate.	N/A	• Subapplicants must adhere to all EPA, state, and local emission standards. • Vehicle and equipment runtimes would be kept to a minimum.
Surface Waters and Water Quality	The No Action Alternative would have minor short-term and minor to moderate long-term adverse impacts on surface waters and water quality.	The action alternatives would have minor short-term adverse impacts and negligible to moderate long-term beneficial impacts on surface waters and water quality.	North Dakota Department of Health's Division of Water Quality, USACE	• Adhere to project specific BMPs from UASCE permits and SWPPP.

Resource	No Action Impacts	Proposed Action Impacts	Agency Coordination or Permits	Mitigation/BMPs
Wetlands	The No Action Alternative would have minor to moderate short-term and long-term adverse impacts on wetlands.	The action alternatives would have no to minor potential impacts on wetlands, both in the short term and long term, from the alternatives. Additionally, action alternatives would have negligible to moderate, long-term, benefits.	North Dakota Department of Environmental Quality, USACE	• Avoidance of wetlands. • Adhere to project specific BMPs from UASCE permits and SWPPP.
Floodplains	The No Action Alternative would have minor short-term and minor to moderate long-term adverse impacts on floodplains.	The action alternatives would have minor short-term adverse impacts and minor to moderate long-term benefits on floodplains.	Coordination with Local Floodplain Manager	• Adhere to local permitting requirements and FFRMS standards.
Vegetation	The No Action Alternative would have negligible to minor short-term and negligible to moderate long-term adverse impacts on vegetation and adverse effects related to invasive species.	The action alternatives would have negligible to moderate short-term adverse impact. The action alternatives would have a minor long-term adverse impact on vegetation from the potential use of herbicide or livestock grazing and a negligible to moderate long-term beneficial impact on vegetation.	N/A	• Restore project area with native trees and vegetation. • Use weed-free seed. Verify seed mix to ensure it does not contain invasive plants.

Resource	No Action Impacts	Proposed Action Impacts	Agency Coordination or Permits	Mitigation/BMPs
Fish and Wildlife	The No Action Alternative would have negligible to minor short-term and minor to moderate long-term adverse impacts on fish and wildlife.	The Replacement Alternative would have negligible to minor short-term adverse impacts on fish and wildlife. The Relocation, Installation, and Combination alternatives would have minor to moderate short-term adverse impacts on fish and wildlife. In the long term, the action alternatives would have minor to moderate long-term adverse impacts on fish and wildlife from the potential permanent loss of habitat and negligible to minor long-term beneficial impacts on fish and wildlife.	N/A	• Erosion control BMPs would be installed, as necessary, to prevent sedimentation from entering downstream waterbodies. • To the extent feasible, activities involving the removal of vegetation would occur outside of the general bird nesting season for migratory birds. • If vegetation removal must occur during the nesting season, qualified personnel must perform a pre-construction inspection of potential nesting habitat prior to the start of vegetation removal activities.
Threatened and Endangered Species	The No Action Alternative would have negligible to moderate short-term and minor to moderate long-term adverse impacts on threatened and endangered species.	The action alternatives would have a minor short-term adverse impact on threatened and endangered species. In the long term, the action alternatives would have a minor long-term adverse impact on threatened and endangered species from the potential permanent loss of habitat and a negligible to minor long-term beneficial impacts on threatened and endangered species.	USFWS Consultation	• Any project conditions provided by USFWS. • Erosion control BMPs would be installed as necessary to prevent sedimentation from entering downstream waterbodies.

Resource	No Action Impacts	Proposed Action Impacts	Agency Coordination or Permits	Mitigation/BMPs
Cultural Resources	The No Action Alternative would have negligible to minor short-term and minor to moderate long-term adverse impacts on historic and cultural resources.	The action alternatives would have negligible to moderate adverse impacts on historic and cultural resources in both the short and long term, depending on the scope and location of specific projects. The action alternatives would also have a negligible to moderate long-term beneficial impact on cultural resources.	SHPO/THPO Consultation	• Should resources be discovered during project implementation, a report will be made immediately to Department of Emergency Services North Dakota, FEMA Environmental and Historic Preservation Regional Officer, and the North Dakota SHPO.
Environmental Justice	Potential impacts on environmental justice populations from the No Action Alternative would range from none to moderate over the short and long term.	The action alternatives would have negligible to minor short-term adverse impacts and minor to moderate long-term beneficial impact. The action alternatives would not have disproportionately high and adverse impacts on environmental justice populations.	N/A	• Any project-specific public involvement requirements

Resource	No Action Impacts	Proposed Action Impacts	Agency Coordination or Permits	Mitigation/BMPs
Hazardous Materials	The No Action Alternative would have negligible to minor short-term and long-term adverse impacts related to hazardous materials.	The action alternatives would have a negligible to minor short-term adverse impact and a minor to moderate long-term beneficial impact.	N/A	• Any hazardous and contaminated materials discovered, generated, or used would be disposed of and handled by the Subapplicant in accordance with applicable federal, state, and local regulations. • Equipment would be kept in good condition. • Any imported fill used at the project site would meet state and local regulations for clean fill. • Any spills or leaks from equipment would be contained and cleaned up right away. The Subapplicant must immediately contact the appropriate regulatory agency, or other contact listed on the Subapplicant's NPDES permit, if applicable.

Resource	No Action Impacts	Proposed Action Impacts	Agency Coordination or Permits	Mitigation/BMPs
Noise	The No Action Alternative would have minor short-term and long-term adverse impacts on noise.	The action alternatives would have minor, short-term, adverse impacts and a negligible, long-term, beneficial impact related to noise.	N/A	• All construction equipment would be well-maintained, have sound-control devices no less effective than those provided on the original equipment, and have muffled exhaust. • Noise-producing equipment use would be limited to allowable construction noise hours consistent with local noise ordinances. • Vehicle and equipment runtimes would be kept to a minimum.
Transportation	The No Action Alternative would have minor short-term and negligible to minor long-term adverse impacts on traffic and transportation.	The action alternatives would have minor short-term adverse impact and a minor long-term beneficial impact on transportation.	N/A	• Installation of clear detour signage or flaggers, if road closures and detours are required during construction.
Public Services and Utilities	The No Action Alternative would have negligible to minor short-term and minor to moderate adverse impacts on public services and utilities.	The action alternatives would have a negligible to minor short-term adverse impact on public services and utilities. The action alternatives would have a minor to moderate long-term beneficial impact on utilities and a minor long-term benefit on public services.	N/A	N/A

SECTION 5. Cumulative Effects

This section addresses the potential cumulative effects associated with the implementation of the action alternatives. Cumulative effects represent the impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions. "Reasonably foreseeable" means sufficiently likely to occur such that a person of ordinary prudence would take it into account in reaching a decision. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.1). CEQ's regulations for implementing NEPA require an assessment of cumulative effects during the decision-making process for federal projects. This PEA reviews the potential for other construction projects to create cumulative effects in and near the project area. Other statutes also require federal agencies to consider cumulative effects. These include the CWA Section 404(b)(1) guidelines, the regulations implementing the conformity provisions of the CAA, the regulations implementing Section 106 of the NHPA, and the regulations implementing Section 7 of the ESA.

The specific projects and location of those projects are unknown at the time of this assessment, which limits the evaluation of cumulative impacts. Therefore, on a project-specific basis, other potential projects in the vicinity that could contribute cumulative effects would need to be evaluated. If there would be moderate to major cumulative effects, an SEA may need to be prepared.

Projects covered under this PEA may have additional activities included within their respective scopes that would normally be covered under FEMA CATEXs (FEMA Instruction 108-01-1) individually (Section 3.3.3). However, there may be cases where these separate actions would not function without one of the action alternatives and, therefore, must be evaluated as a complete project.

FEMA anticipates any CATEX action connected to the action alternatives would not have cumulatively significant adverse impacts on environmental or historic resources. If any projects covered under the PEA, in conjunction with the aforementioned CATEXs, would have major impacts or impacts that cannot be mitigated, a separate SEA would be required.

SECTION 6. Agency Coordination, Public Involvement, and Permits

6.1. Notice of Intent

FEMA published a notice of intent to solicit input on the proposed PEA from other federal and state agencies, tribes, and the public. The notice of intent was published in the *Bismarck Tribune* on July 12, 2024. The comment period to solicit input about the scope of the analysis was held open for 30 days following the publication date and then closed on August 11, 2024. Agencies, tribes, and interested persons were requested to comment on the purpose and need, alternatives, potential environmental impacts, and measures to reduce those impacts. FEMA did not receive any comments.

6.2. Notice of Availability and Public Comment

In accordance with NEPA, FEMA is releasing this draft PEA to the public, federal and state agencies, and tribes for a 30-day public review and comment period. Comments on this draft PEA will be incorporated into the final PEA, as appropriate. This draft PEA reflects the evaluation and assessment of the federal government, the decision-maker for the federal action; however, FEMA will consider any substantive comments received during the public review period to inform the final decision regarding NEPA reviews for grant projects under the PEA. If no substantive comments are received from the public, federal and state agencies, or tribes, this draft PEA will be finalized and a Finding of No Significant Impact will be issued by FEMA. The Notice of Availability was posted in the *Bismarck Tribune* and the final PEA will be made available on FEMA's NEPA repository (https://www.fema.gov/emergency-managers/practitioners/environmental-historic/nepa-repository).

Comments on the draft PEA may be submitted to the FEMA email at fema-r8ehp@fema.dhs.gov; include 'North Dakota Utility PEA' in the subject line. Comments also may be submitted via mail to: Denver Federal Center, Building 710, Box 25267, Denver, Colorado 80225-0267, Attn: Richard Myers.

6.3. Preparation of SEAs

Any SEAs that are tiered off this PEA would go through an appropriate level of public review before FEMA makes a NEPA compliance determination for those specific projects. When a Proposed Action could result in impacts on the environment beyond those described in this PEA and require mitigation in addition to that included in this document, or has the potential for public controversy, FEMA would prepare and circulate a draft SEA for public and agency review and comment. For these types of activities, FEMA would prepare a separate decision document (i.e., a Finding of No Significant Impact or a notice of intent to prepare an Environmental Impact Statement).

FEMA would comply with the public notification process required for compliance with EO 11988 and 11990 and 40 CFR § 9, when applicable for an action. Additionally, a Cumulative Public Notice will

be published at the time of the Presidential Declaration of each future disaster under which FEMA-funded projects may be proposed that could be covered by this PEA for NEPA compliance.

6.4. Project Conditions and Permits

The Subapplicant will be responsible for obtaining any necessary local, state, or federal permits needed to conduct the proposed work. The Subapplicant would be required to adhere to the following conditions and permits, as applicable.

Soils, Water Resources and Water Quality, Floodplains, and Wetlands

- For projects that would result in the conversion of important farmland soils to non-farm uses, consult with NRCS and complete a land evaluation and site assessment (U.S. Department of Agriculture's Form AD-1006).
- Coordinate with USACE and the North Dakota DEQ to obtain any required CWA permits or Nationwide Permit authorizations.
- Develop a SWPPP in accordance with the required NPDES permit.
- Comply with state and local floodplain and floodway regulations, including coordination with the local floodplain manager.

Air Quality and Climate

- Adhere to all EPA, state, and local emission standards.

Vegetation and Invasive Species

- Confine vehicles and equipment to existing roadways to the maximum extent practicable.
- Vehicles used off-road will be rubber-tired to the maximum extent practicable to reduce the potential for soil disturbance and compaction.
- For projects involving revegetation of disturbed areas, use native plants appropriate for site conditions.

Fish and Wildlife

- Spray/rinse all equipment used in the water with high-pressure hot water to clean off mud and kill aquatic invasive species after use in project areas. Drain motor, bilge, livewell, and other water-containing devices from all equipment before leaving aquatic project areas.
- Dry all equipment used in the water for five days or more or wipe dry with a towel before use in another water body.
- To the maximum extent practicable, avoid vegetation removal from March through August to avoid impacts on nesting migratory birds.

- If bald or golden eagles are present in the project area, consult with USFWS to develop mitigation measures (pursuant to 16 U.S.C. § 668).

- Conduct in-water work during times of the year that minimize adverse effects on fish spawning areas during spawning seasons.

Threatened and Endangered Species

- Implement BMPs related to the protection of water quality, wetlands, vegetation, and fish and wildlife habitat.

- As needed, develop avoidance and minimization measures in consultation with USFWS in accordance with Section 7 of the ESA (50 CFR Part 402).

Archaeological Resources and Tribal and Religious Sites

- Project designs should minimize deep cuts into natural cultural resource-bearing strata during grading and excavation to the maximum extent possible.

- Use existing roads and access points to the maximum extent possible and minimize the creation of new access roads. If new access roads or staging areas are required, survey those areas for the presence of cultural resources before construction begins.

- Use low-impact equipment to cross intact landscapes to the extent practicable (e.g., rubber-tired vehicles and equipment).

- If appropriate, design planting plans in keeping with the historic context.

- If appropriate, use materials that are context sensitive.

Environmental Justice

- If EJ populations are present in a project area, and would be disproportionately impacted, develop public outreach efforts and engagement strategies to effectively engage these populations about the proposed project and to develop mitigation measures.

Hazardous Materials

- Manage and dispose of excavated soil and waste materials in accordance with applicable federal, state, and local regulations. In the event of discovery of soil or water contaminants exceeding reportable levels, the subapplicant and its construction contractor(s) will follow applicable federal, state, and local protocols to report and handle the contaminants appropriately.

- All fill material must come from pre-existing stockpiles or commercially procured material from a permitted and licensed source. Documentation of borrow sources used is required at grant closeout.

- If hazardous materials (or evidence thereof) are discovered during the implementation of the project, handle, manage, and dispose of petroleum products, hazardous materials, and/or toxic waste in accordance with the requirements and to the satisfaction of the governing local, state, and federal regulations.

- During construction, the Subapplicant and their contractor must notify the North Dakota DEQ or the North Dakota Department of Emergency Services about any sudden release or spill of any chemical (either oil or a hazardous material). The North Dakota Administrative Code (Chapter 33-16.02.1-11) requires that spills and other sudden releases be reported so that assessment and cleanup can begin. Copies of documentation to and from the North Dakota DEQ must be forwarded to the state and FEMA for inclusion in the administrative record.

Noise

- Construction activities must comply with allowable construction noise hours and be consistent with local noise ordinances.

- Equipment used would meet applicable local, state, and federal noise control regulations.

Public Services and Utilities

- If utilities need to be temporarily shut off during construction, follow local ordinances regarding shutdown procedures and notification.

- Decommission utilities that are abandoned in place in accordance with state and local standards.

SECTION 7. List of Preparers

The following is a list of preparers who contributed to the development of the Improvement of Utility Systems in the State of North Dakota PEA for FEMA. The individuals listed below had principal roles in the preparation of this document. Many others contributed, including senior managers, administrative support personnel, and technical staff, and their efforts in developing this PEA are appreciated.

Federal Emergency Management Agency

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Preparers	Experience and Expertise	Role in Preparation
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Appendix A:

Utilities Checklist

Appendix A. Utilities Checklist

The purpose of this checklist is to assess proposed projects potentially covered under the Programmatic Environmental Assessment (PEA) for Improvement of Utility Systems in the State of North Dakota and Finding of No Significant Impact (FONSI).

Project Information

Date:	
Project Name and Location:	
Project Description:	
Comments Notes:	
PEA Alternative Used	

Evaluation

This section evaluates the potential impacts of the proposed project.

Resource	Are Impacts Consistent with Description in PEA? (Yes/No)	Are There Additional Impacts? (Yes/No)	Are Supporting Documents Attached?
Soils and Topography			
Air Quality and Climate			
Surface Waters and Water Quality			
Wetlands			
Floodplains			
Vegetation			
Fish and Wildlife			

Resource	Are Impacts Consistent with Description in PEA? (Yes/No)	Are There Additional Impacts? (Yes/No)	Are Supporting Documents Attached?
Threatened and Endangered Species and Critical Habitat			
Cultural Resources			
Environmental Justice			
Hazardous Materials			
Noise			
Transportation			
Public Services and Utilities			

REGULATORY CHANGES

Document changes to laws, regulations, and/or guidelines since signature of PEA FONSI:

IMPACT ASSESSMENT

For items checked as having additional impacts: assess the affected natural and socio-economic environment, impacts and new issues/concerns which may now exist:

MITIGATION

List specific mitigation measures for each resource impacted (both impacts from PEA or additional impacts):

PUBLIC/AGENCY INVOLVEMENT

Document any public meetings, notices, & websites, and/or document agency coordination. For each provide dates, and coordination:

PERMITS

List required permits and status of permit:

ATTACHMENTS LISTED

List maps, studies, background data, permits, etc.

Conclusion and Recommendation

	The project is consistent with the alternatives and impacts as described in the PEA.
	The project generally is consistent with the alternatives and impacts as described in the PEA, but includes some minor impacts not described in the PEA which are documented in this checklist.
	The project requires a Supplemental Environmental Assessment because (1) creates impacts not described in the PEA; (2) creates impacts greater in magnitude, extent, or duration than those described in the PEA; or (3) requires additional mitigation measures that are not described in the PEA to keep impacts below significant levels.

Appendix B:

Principles, Requirements, & Guidelines

Appendix B. Principles, Requirements, & Guidelines

This appendix is limited to utility improvement projects that affect water resources. Under the Principles, Requirements, and Guidelines (PR&G), in addition to meeting the project purpose and need, the alternatives for water resource projects must also be evaluated against their ability to achieve the Federal Objective and to conform to the guiding principles. The Federal Objective specifies that federal water resources investments shall reflect national priorities, encourage economic development, and protect the environment by:

1. Seeking to maximize the sustainable economic development;
2. Seeking to avoid the unwise use of floodplain and flood-prone areas and minimizing adverse impacts and vulnerabilities in any case in which a floodplain or flood-prone area must be used; and
3. Protecting and restoring the functions of natural systems and mitigating any unavoidable damage to natural systems.

The guiding principles for the PR&G analysis are six overarching concepts that the federal government seeks to promote through federal investments in water resources. The guiding principles are: (1) Healthy and Resilient Ecosystems, (2) Sustainable Economic Development, (3) Floodplains, (4) Public Safety, (5) Environmental Justice, and (6) Watershed Approach (FEMA 2018). The guiding principles are key concepts that the potential consequences of the alternatives are evaluated against and are often framed in terms of ecosystem services that may be provided or affected by a project. This appendix provides the watershed context for the study area and a model of ecosystem services potentially provided by the action alternatives. A comparison of the alternatives against the Guiding Principles is shown in Table B-1.

This PR&G analysis provides an overview of watershed conditions within North Dakota and establishes a framework for the evaluation of utility improvement projects. Because a PR&G analysis is intended to evaluate how a proposed project may affect water resources and the services provided by those resources within the context of a specific watershed and other activities in that watershed, it is not possible to complete the evaluation on a programmatic basis. The PR&G is intended to provide a consistent framework for evaluating water resource projects that considers public benefits and promotes consistency, resilience, and coordination among federal agencies' investments from a watershed perspective. This programmatic evaluation identifies the larger environmental trends and context that would affect all proposed projects within the study area and provides a conceptual framework for how utility improvement projects may affect ecosystem services and the guiding principles. This framework can be used to expeditiously conduct project level reviews when applying the PEA to a specific proposed action.

The first two steps of the PR&G analysis, defining the purpose and need and describing a range of alternatives, are completed in the PEA in Sections 2 and 3, respectively. The third step, identify existing conditions, is presented programmatically in Section 4 of the PEA; however, existing conditions will also need to be assessed on a project specific basis to identify any conditions not described in the PEA and to identify the project-specific watershed conditions. Specific watershed

considerations may include existing watershed plans; other water resource investment projects, needs, or trends in the watershed; or project area environmental justice communities that may be affected. The future conditions of the study area, the fourth step, is a description of the future under the no action alternative. The no action alternative is evaluated in the PEA. The fifth step is to evaluate the action alternatives, which is presented in Section 4 of the PEA. If there are watershed specific, existing conditions relevant to the PR&G, then a brief supplemental analysis would be needed to fully assess the effects of a proposed project against the guiding principles and for consistency with the Federal Objective.

1.1. Watershed Context

In compliance with the PR&G analysis, the watershed context for the action alternatives provides additional insight regarding the need for this project as well as other water resources investments proposed within the vicinity. The study area for this PEA, North Dakota, encompasses a portion of two regional watersheds, the Missouri watershed covers the southwestern portion of the state and the Souris Red Rainy watershed covers the northeastern portion of the state. The Missouri watershed encompasses a drainage area of approximately 520,960 square miles in Colorado, Iowa, Kansas, Minnesota, Missouri, Montana, Nebraska, North Dakota, South Dakota, and Wyoming and includes the Missouri River, which stretches over 2,300 miles (U.S. Geological Survey 2024). The Souris Red Rainy watershed encompasses approximately 90,759 square miles in Minnesota, North Dakota, and South Dakota (U.S. Geological Survey 2024). These regional watersheds are the largest geographic area in the U.S. Geological Service's classification of hydrologic units. Water resource planning and project development typically occurs at a smaller scale; often in areas represented by 8-, 10-, or 12-digit hydrologic unit codes where the larger numbers represent smaller geographic areas. While the regional scale watersheds are useful for providing some context and insights into general trends, understanding of the project-scale watershed area will be necessary to identify project-specific PR&G considerations.

Erosion and flooding within these watersheds are common occurrences that can cause extensive damage to infrastructure and exceed the existing stormwater or wastewater utility capacity. Climate change is increasing the incidence of heavy precipitation and storm events, which have become more frequent and intense in the past 30 to 40 years, resulting in increased stormwater drainage flows and incidents of erosion and flooding. Annual precipitation has increased 5 percent to 15 percent from the first half of the last century (1901 to 1960) compared to the present day (1986 to 2015). Winter and spring precipitation is projected to increase by up to 30 percent by the end of this century. Heavy precipitation events have increased in frequency and intensity since 1901 and are projected to increase throughout this century (Easterling et al. 2017). The increased frequency and intensity of storms and stream flows has also increased the levels of flooding in these watersheds and it is expected to continue to worsen.

1.2. Conceptual Model for Ecosystem Services

The conceptual model for the PR&G principles shows how changes in ecological conditions resulting from the implementation of the action alternatives would affect the provision of ecosystem services and their linked societal benefits. In an ecosystem services assessment, the conceptual diagram

provides a systematic approach to connect ecological conditions to societal benefits. It also considers how and which changes in the environment affect benefits to people. When causal connections to people are not made explicit, it is unclear whether and how each ecological change would result in changes to social benefits, and important changes to societal benefits may be left out of the analysis.

Figure B-1 shows the general model for utility improvement projects. The model—also known as a causal chain—links changes caused by an external stressor or intervention (i.e., construction of utility improvement projects) through the ecological system to socioeconomic and human well-being outcomes. The conceptual model provides a visual representation of cause and effect but does not indicate the direction of the effect or the change (e.g., increase or decrease). More integral or stronger connections are emphasized in the model with larger boxes and thicker connector lines. The model for the utility improvement projects considers the expected outcomes from the effects of constructing projects to reduce risk of utility failure.

The conceptual model for the action alternatives was developed by first considering how the alternatives would affect the ecological conditions of the project area. Next, these anticipated changes in ecological conditions were considered as to whether and how they would change the delivery of ecosystem services currently provided within the project area, and how changes in the delivery of ecosystem services could affect benefits or costs to individuals or groups within the project area and the larger watershed (FEMA 2018).

As shown in Figure B-1, the action alternatives would affect water flows and floodplain functions to varying degrees. Each of those functions contributes to one or more societal benefits. As the utility improvement project alters the water flow and floodplain functions, the corresponding societal benefits are impacted to a greater or lesser degree and effects may be positive or negative. The model provides a conceptual visualization of the connections and the magnitude of the potential changes but does not indicate whether changes would be considered beneficial or adverse. The model does show that the societal functions most likely to be affected by the proposed utility projects are those most closely aligned with the purpose and need for the action alternatives, such as public safety and property damage.

Construction of utility improvement projects would meet the purpose and need by reducing the risk that utilities may be damaged or fail to properly function because of a natural hazard. These projects would protect important public services that are needed within the community while also increasing employment opportunities. Reduced erosion and flooding would have a positive impact on the community by reducing the associated insurance costs, reducing property damage costs, and reducing risks to public health and safety. Additionally, these projects would have a beneficial effect on water quality, including floodplain and wetland health, resulting in a resilient ecosystem. Therefore, the action alternatives meet the PR&G federal objective and follow the guiding principles.

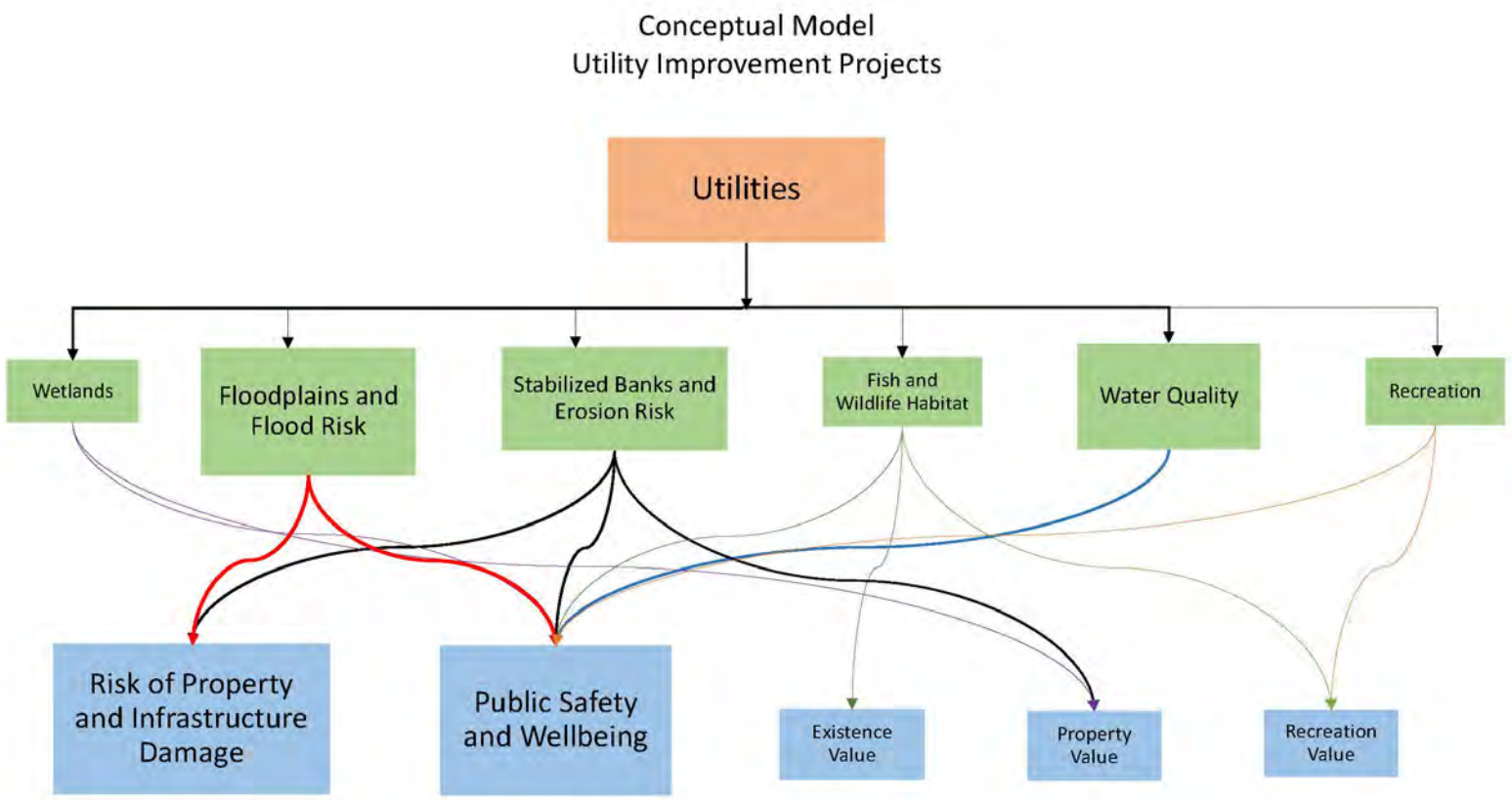


Figure B-1. Conceptual Model for Utility Improvement Projects

1.3. Interplay of Ecosystem Services and Societal Benefits and Costs

The FEMA PR&G Agency-Specific Procedures (FEMA 2018) require that impacts of the Proposed Action be analyzed using an ecosystem services approach. Ecosystem services are benefits that flow from nature to people. These services include direct and indirect contributions, including the economic and social benefits, that ecosystems provide to the environment and human population. Changes in the ecological condition due to the action alternatives would affect ecosystem services and their linked societal benefits or costs. Ecosystem services are categorized into three general types:

1. Provisioning services, which refer to the food, fuel, fiber, and clean water that ecosystems provide.
2. Regulating services, which refer to the benefits obtained from the regulation of ecosystem processes.
3. Cultural services, which refer to the benefits ecosystems confer that do not directly relate to human physical health or material well-being.

Ecosystem services as shown in the conceptual model were analyzed programmatically for impacts on watersheds that would be impacted by utility work within North Dakota. However, when considering a specific project, reviewers should evaluate potential effects against the local watershed and site-specific conditions and identify if there are any impacts not described below.

- **Wetlands** provide a variety of ecosystem services that encompass both provisioning and regulating services. Wetlands provide food, fiber, and clean water; regulate water supply (e.g., flood retention, base stream flow support); and sequester carbon. Wetlands in the study area would be adversely affected if they were directly disturbed or impacted by fill or other construction activities within or adjacent to wetlands. Construction related impacts can also include increased sedimentation or turbidity within wetland waters. If utility improvement projects disconnect nearby wetlands from the stream, their hydrology could be adversely impacted. Stormwater and wastewater management projects could protect wetlands from runoff and pollutants and would likely benefit nearby wetlands and protect the wetland services. Healthy wetlands would benefit the public safety and wellbeing by improving water quality, providing erosion control, and flood abatement. These services would provide protection to adjacent properties and recreational opportunities that would also benefit property values and public wellbeing.

- **Floodplains** provide provisioning, regulating, and cultural ecosystem services. Floodplains are prime locations for food and fiber production; they regulate flooding; and historically are the preferred location for human settlements due to their position along streams and rivers that provided connectivity and access to other settlements and resources. Construction activities could potentially release sediments and pollutants into the floodplain. In the long term, improving wastewater management and reducing the risk of stormwater-related flooding would reduce the amount of pollutants entering the floodplain. Furthermore, some project types would

have flood mitigation elements, reducing flood-related damage to infrastructure and flood-related health and safety risks to the community; thereby benefiting the social benefits of public safety and wellbeing and property values.

- **Erosion Risk** affects the provisioning and regulating services of the ecosystem. Erosion results in soil loss at the point of erosion, affecting soil productivity and water quality. Degradation of a stream channel can affect flows, which may alter fish and wildlife habitats, flood levels, and water supply. When soil erodes from one area in a stream system, it will be deposited somewhere else, creating similar issues in the aggrading area. Construction of the action alternatives could cause temporary erosion in and near the project sites. However, some project types would help reduce erosion risks to property and infrastructure. Erosion mitigation would prevent damage to nearby properties, reduce health and safety risks to the community from unsafe conditions, and increase property values by reducing risk of property loss.

- **Fish and wildlife habitat** provides provisioning and cultural services. Construction activity could result in the injury or death of individuals during project implementation or the loss or degradation of habitat. Nesting bird species protected by the Migratory Bird Treaty Act could be negatively impacted by construction activities that require the removal of vegetation. Over the long term, properly functioning stormwater and wastewater utilities could reduce the risk of flooding, thereby protecting aquatic habitat from runoff and pollutants and improving water quality. This in turn would provide protection for the public and increase recreation, existence, and property values as healthy habitats support a diversity of fish and wildlife and creates a healthy ecosystem for people and supports the value of nature itself.

- Utility improvement projects would affect **water quality**, a provisioning service. Water quality in the study area would be affected in the short term by construction-related turbidity, stormwater runoff, or pollutants entering the water. In the long term, improved stormwater and wastewater management would aid in avoiding the mobilization of pollutants from the urban environment. Improved water quality would benefit community health and wellbeing by providing clean water and reducing the risk of water-related contamination.

- **Recreation** is a cultural ecosystem service provided by public open space and waterways. Recreation could be impacted by changes in access during construction of projects. Improved stormwater and wastewater management and the protection of utilities at recreational facilities would improve access for recreational activities by reducing future damage to and outages at these facilities. Improved recreational value and opportunities would also benefit public health and wellbeing.

1.4. PR&G Principles Impact Analysis Summary

The Federal Objective specifies that federal water resources investments shall reflect national priorities, encourage economic development, and protect the environment by: seeking to maximize sustainable economic development; seeking to avoid the unwise use of floodplains and flood-prone areas and minimizing adverse impacts and vulnerabilities in any case in which a floodplain or flood-

prone area must be used; and protecting and restoring the functions of natural systems and mitigating any unavoidable damage to natural systems.

Table B-1 provides a summary of the potential impacts on ecosystem services from each alternative and their linked societal benefits. This table is limited to utility improvement projects under the action alternatives that affect water resources, such as stormwater and wastewater utility projects.

Table B-1. PR&G Guiding Principles for the No Action and Action Alternatives Impacts

PR&G Guiding Principles	No Action Alternative	Action Alternatives
Healthy and Resilient Ecosystems	Minor changes to the baseline could occur, however, not to the extent of the action alternatives. Ecosystems in and near project areas would continue to experience erosion and sedimentation from storm events that would be made worse by climate change.	The action alternatives would improve stormwater and wastewater management and reduce the spread of pollution carried by floodwaters in and downstream of project sites. Erosion reduction would help prevent loss of vegetated habitats.
Sustainable Economic Development	Homes and businesses in project vicinities would continue to be susceptible to utility outages and erosion and flood related damage that would result in economic disruptions and require funds to repair damage.	Some types of utility improvement projects would reduce flooding related road closures and utility outages resulting in fewer economic disruptions. The projects would also reduce erosion, mitigate flooding, and would reduce the amount of future spending required for insurance and repairs.
Floodplains	Existing floodplains would be at risk from erosion related sedimentation and pollution washing into them. Facilities and infrastructure would continue to be vulnerable to flood damage.	The action alternatives would reduce the amount of pollutants entering the floodplain and reduce the risk of flow impediment from damaged utilities, preserving their natural state. The action alternatives could also provide additional flood mitigation, reducing flood risk to facilities and infrastructure.
Public Safety	Public safety in and near project areas would continue to be threatened by utility outages and flooding including the potential for adverse impacts on critical facilities.	Improved public safety resulting from a reduction stormwater-related flooding and a reduction in the likelihood that public service utilities and critical facilities in the benefit area would be damaged or disrupted.

PR&G Guiding Principles	No Action Alternative	Action Alternatives
Environmental Justice	Continued risk of utility outages and flooding has the potential for disproportionately high and adverse impacts on low-income communities, as they are unlikely to have the same resources available to recover from the loss of utilities and flood damage compared to other populations.	The action alternatives would not have a disproportionately high and adverse impacts on low-income populations. Utility improvement projects would benefit low-income populations both by reducing utility outage and flood risk to assets that serve environmental justice communities.
Watershed Approach	There would be a continued risk of erosion and flood related sediments and pollutants entering watersheds. The sediments and pollutants impacts would likely be localized due to the size constraint of the action alternatives.	The action alternatives are expected to reduce sediments and pollutants entering watersheds and would improve stormwater and wastewater management. This would have a localized benefit on the health of watershed as the size of the projects allowed under the action alternatives would likely not have a regional impact on watershed health. Where watershed planning has occurred, the action alternatives would likely be consistent with the watershed approach. This principle is difficult to assess programmatically, and individual projects would need to be evaluated for consistency with existing watershed approaches.

The action alternatives would be consistent with the PR&G Federal Objective that water resource investments shall reflect national priorities, encourage economic development, and protect the environment because it would reduce erosion and flood related damage within floodplains, which would promote sustainable economic development by lowering damage costs and improving natural functions. The action alternatives would also avoid the unwise use of floodplains, minimize adverse impacts and vulnerabilities, and protect the functions of natural systems by avoiding impacts on functional floodplain habitats to the maximum extent possible and mitigating remaining impacts on functional floodplain habitats within each project site.

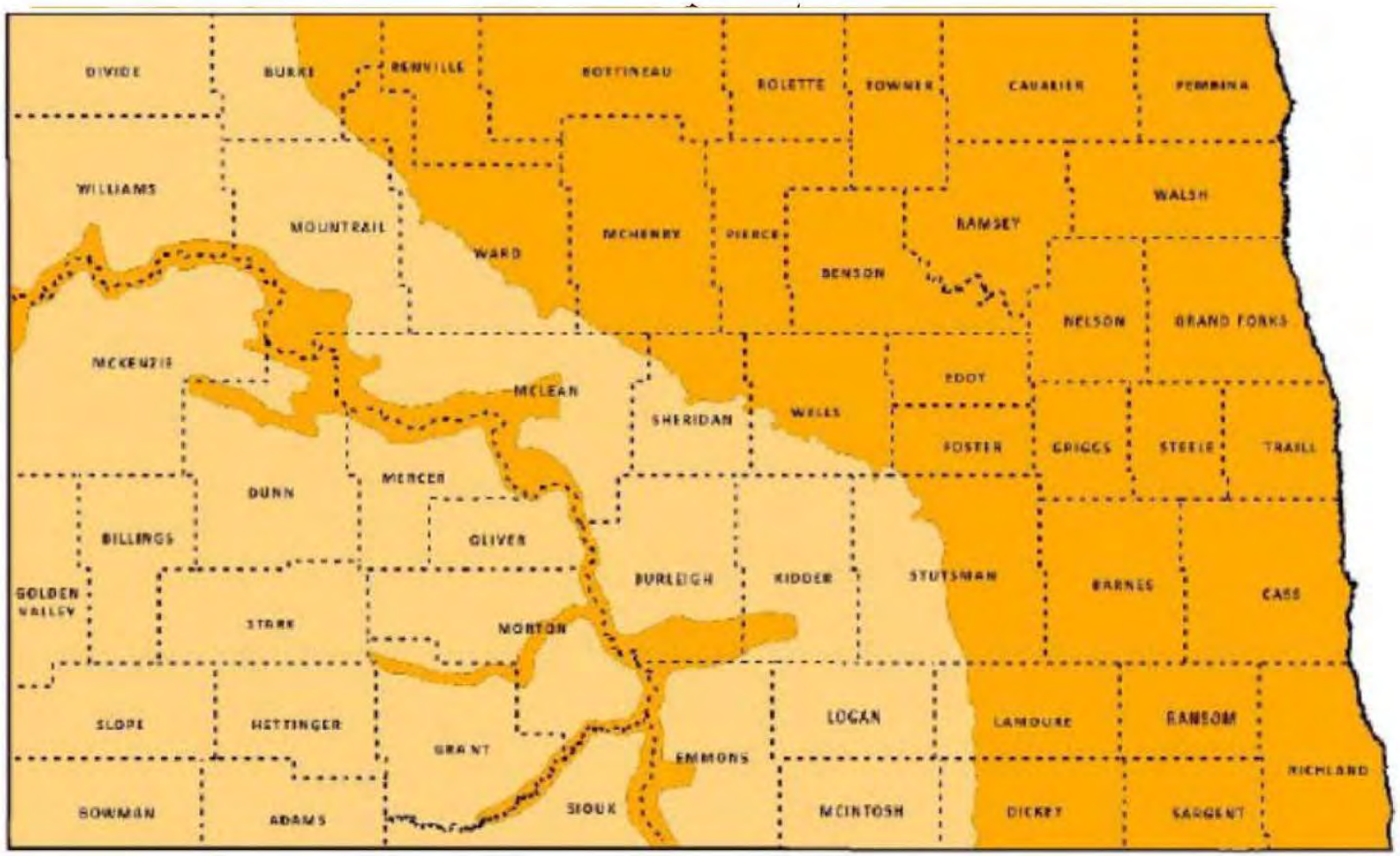
1.5. References

Easterling, D.R., K.E. Kunkel, J.R. Arnold, T. Knutson, A.N. LeGrande, L.R. Leung, R.S. Vose, D.E. Waliser, and M.F. Wehner, 2017: Precipitation change in the United States. In Climate Science Special Report: Fourth National Climate Assessment, Volume I. D.J. Wuebbles, D.W. Fahey, K.A. Hibbard, D.J. Dokken, B.C. Stewart, and T.K. Maycock, Eds., U.S. Global Change Research Program, pp. 207-230, doi:10.7930/J0H993CC.

Federal Emergency Management Agency (FEMA). 2018. Handbook on FEMA's Agency Specific Procedures for the Principle, Requirements, and Guidelines (PR&G) Analysis. Accessed September 19, 2024. https://www.fema.gov/sites/default/files/2020-07/fema_ehp_instructions_implementation_2018.pdf.

U.S. Geological Survey. 2024. Boundary Descriptions and Names of Regions, Subregions, Accounting Units and Cataloging Units. Accessed September 19, 2024. https://water.usgs.gov/GIS/huc_name.html.

Appendix C:
Wildlife and Threatened and Endangered Species Figures



N

0 25 50 100

Miles

Legend

Primary Range

Secondary Range

Figure 1

Bald Eagle Range in North Dakota

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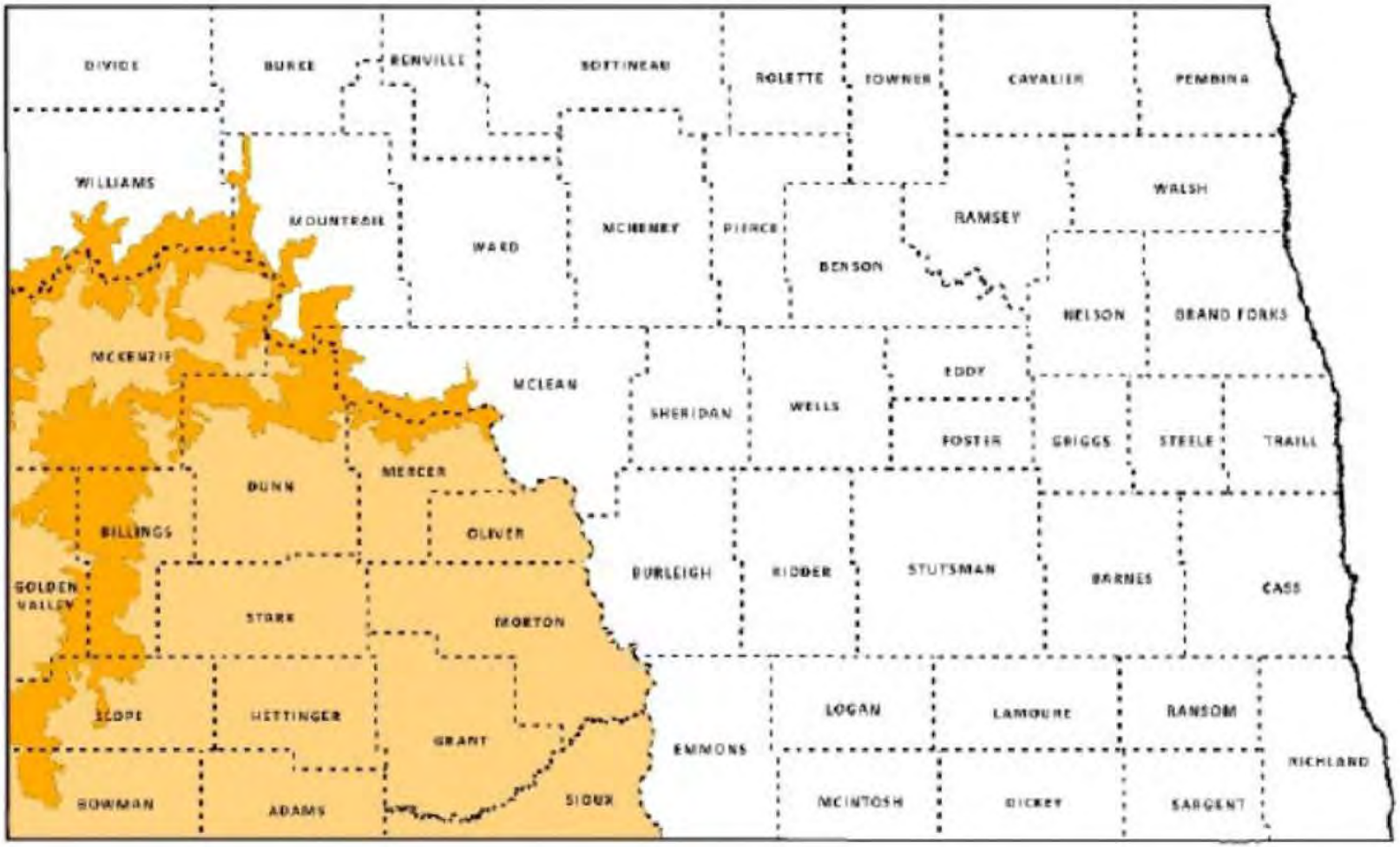

N

0 25 50 100

Miles

Legend

Primary Range

Secondary Range

Figure 2

Golden Eagle Range in North Dakota

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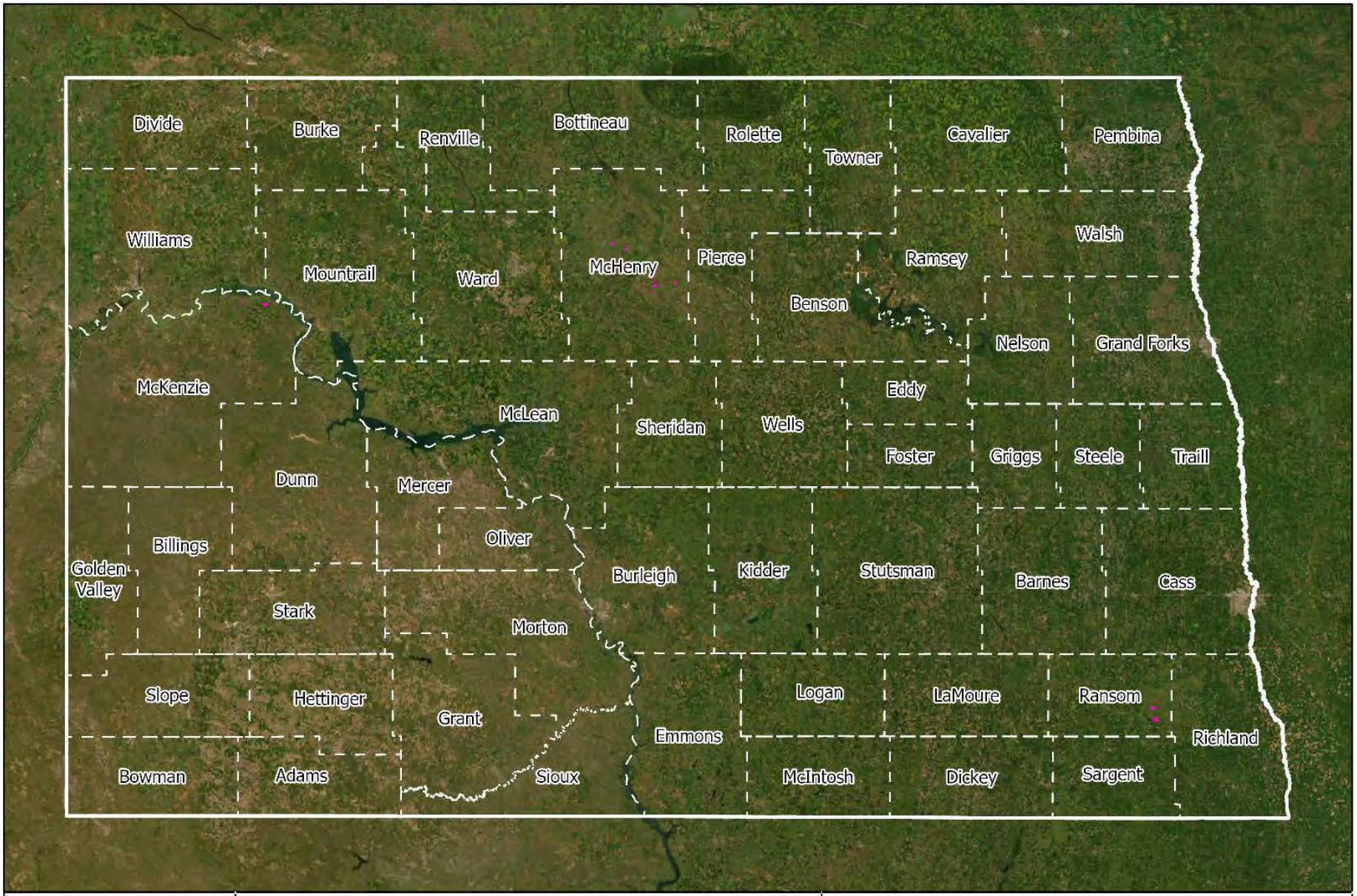

LEGEND

Dakota Skipper

FIGURE 3. DAKOTA SKIPPER CRITICAL HABITAT IN NORTH DAKOTA

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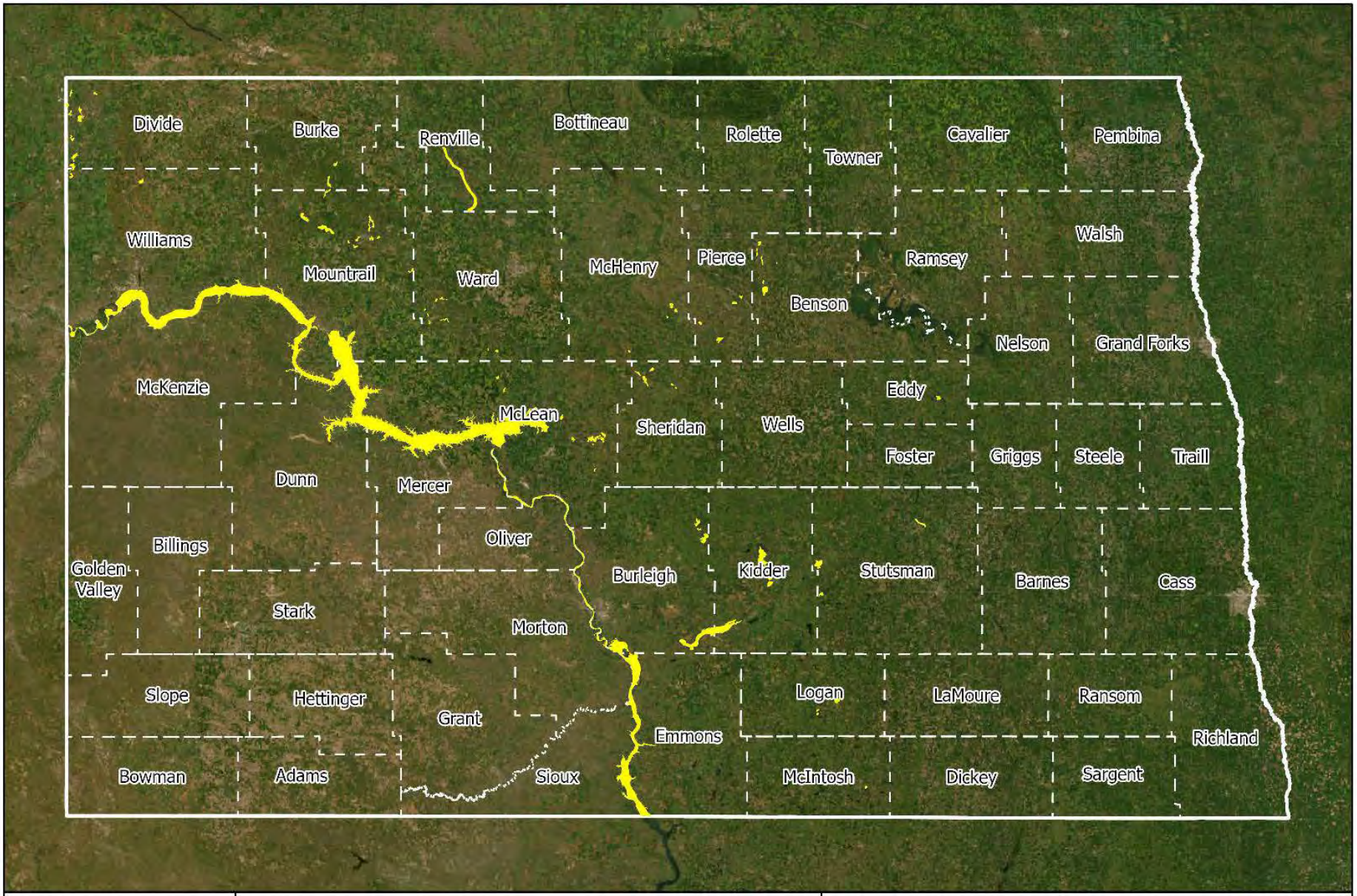
0 50 100 Miles

N



LEGEND

Piping Plover

FIGURE 4. PIPING PLOVER CRITICAL HABITAT IN NORTH DAKOTA

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0 50 100 Miles

N

LEGEND

Poweshiek Skipperling

FIGURE 5. POWESHIEK SKIPPERLING CRITICAL HABITAT IN NORTH DAKOTA

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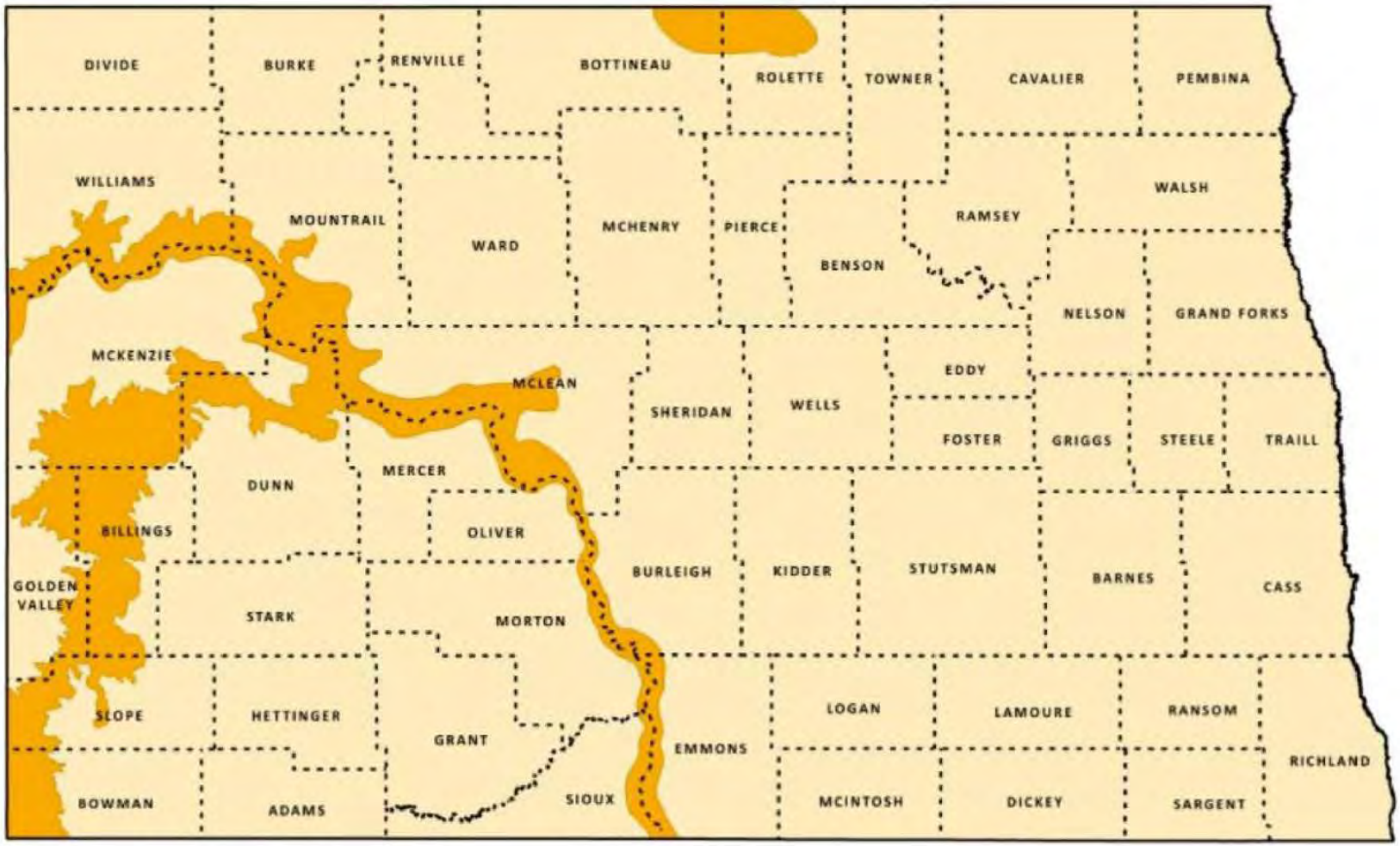
0 15 30
Miles

N



N

0 25 50 100

Miles

Legend

Primary Range

Possible Range

Figure 6

Northern Long-eared Bat Range in North Dakota

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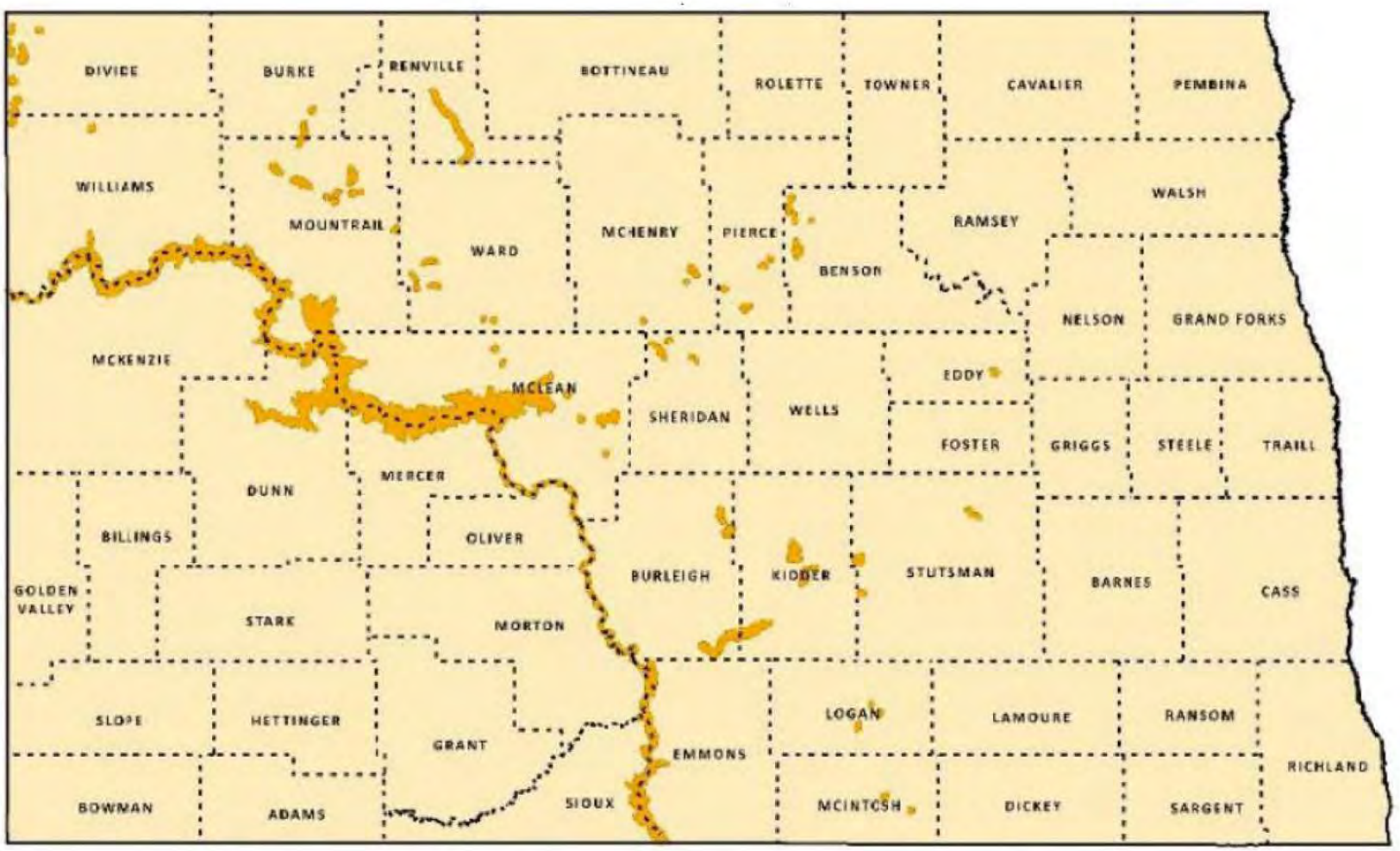

N

0 25 50 100

Miles

Legend

Primary Range

Possible Range

Figure 7

Piping Plover Range in North Dakota

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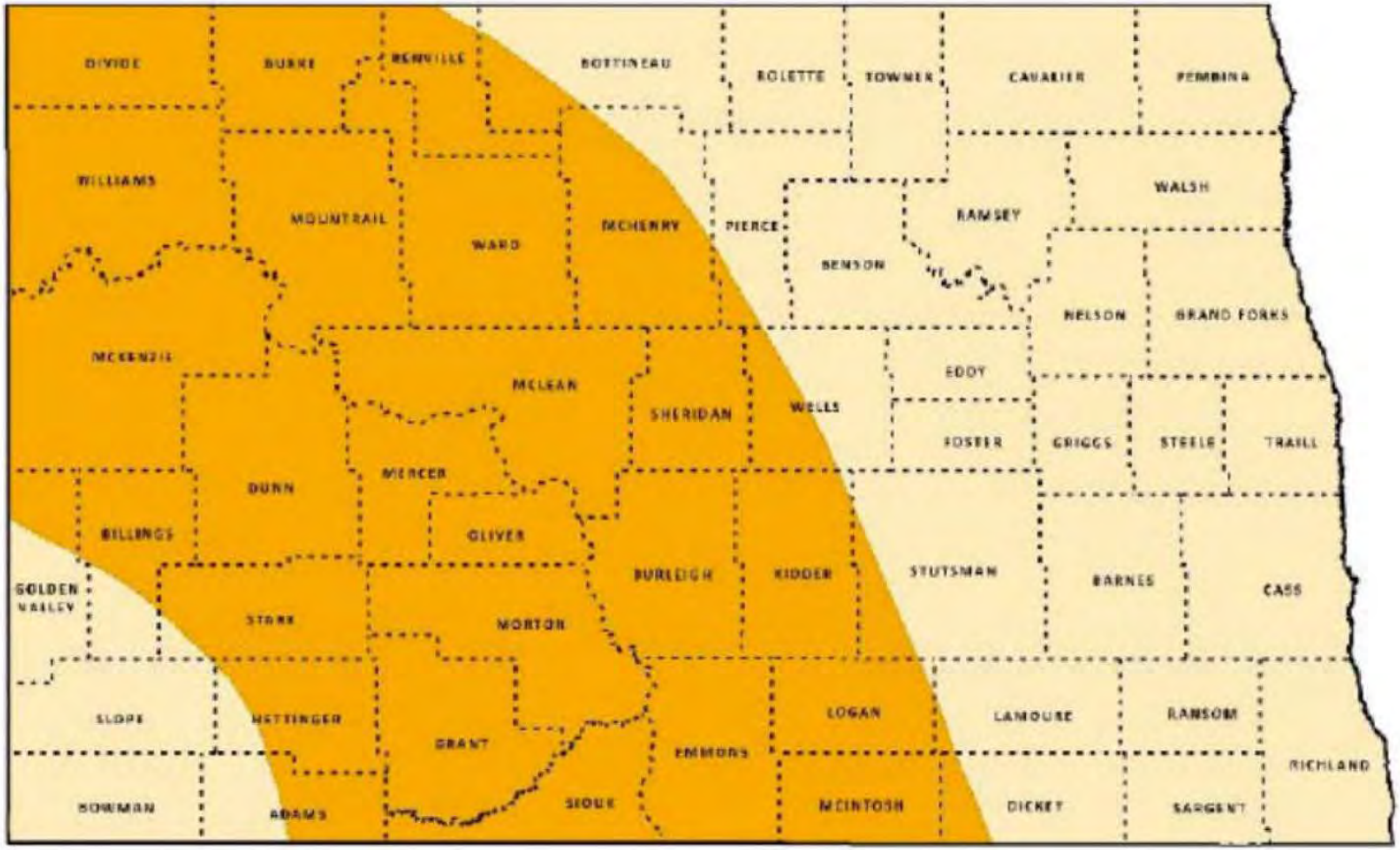

N

0 25 50 100

Miles

Legend

Primary Range

Possible Range

Figure 8

Whooping Crane Migratory Corridor in North Dakota

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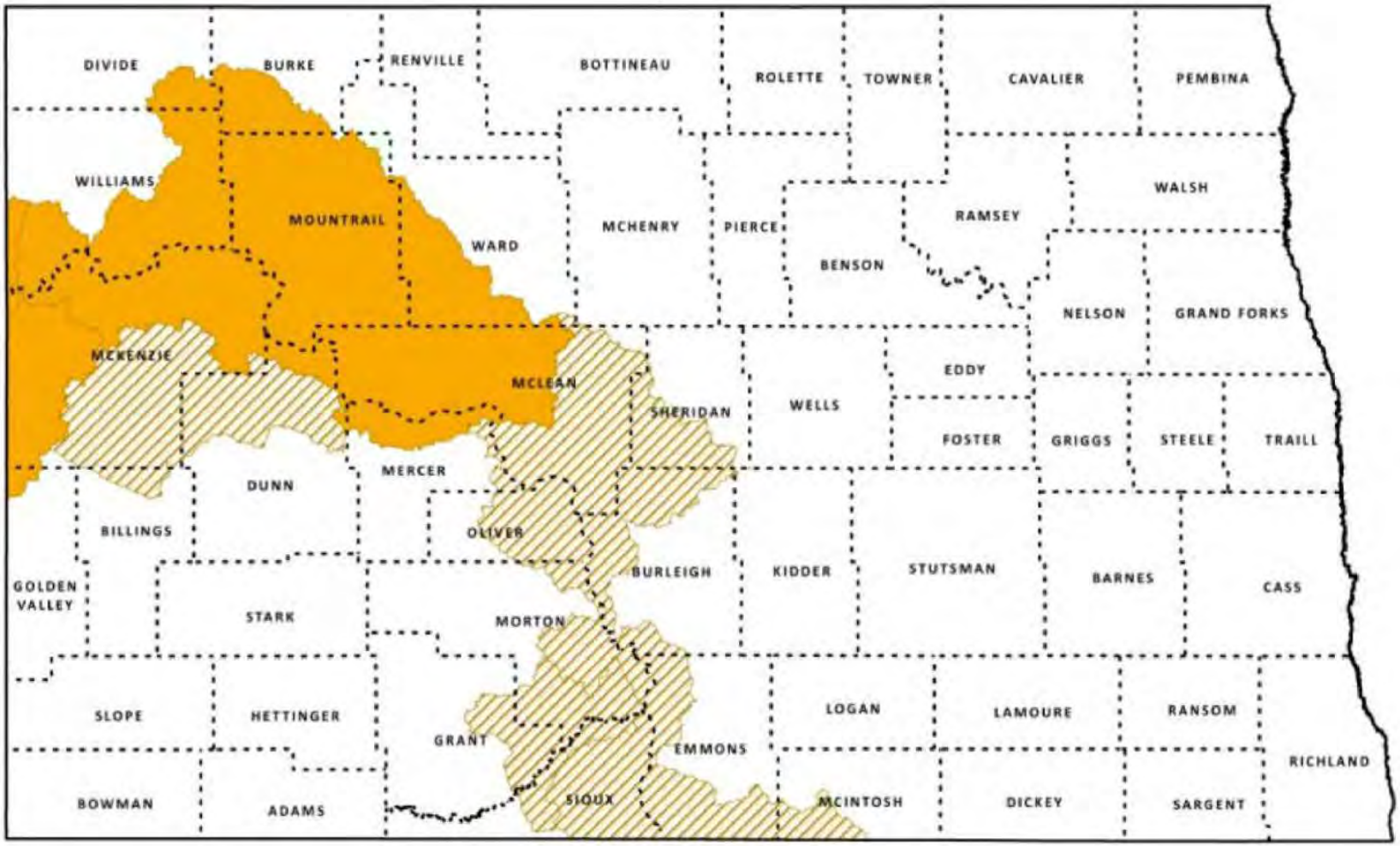

N

0 25 50 100

Miles

Legend

Primary Range

Historical Range

Figure 9

Pallid Sturgeon Range in North Dakota

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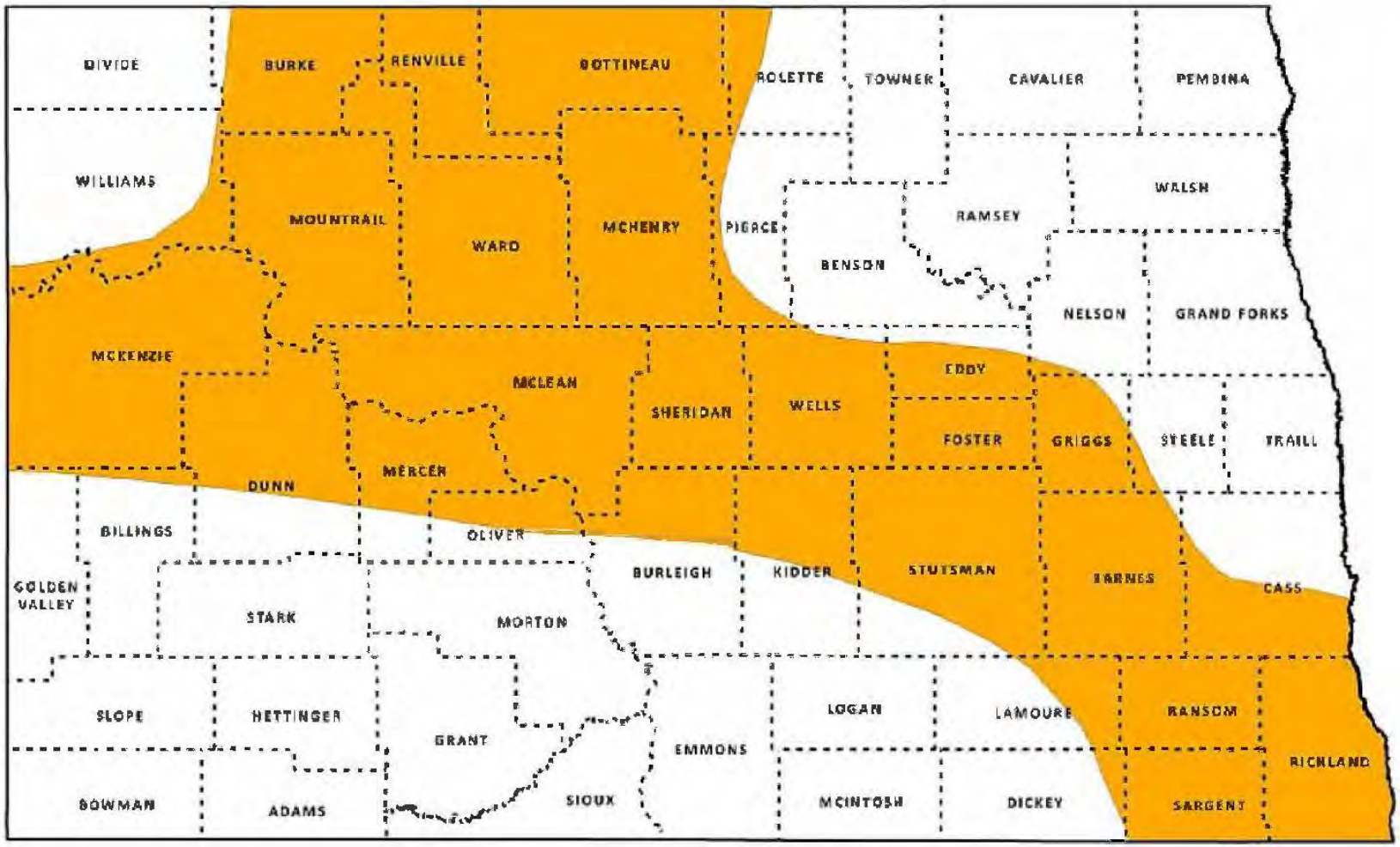

N

0 25 50 100

Miles

Legend

Primary Range

Figure 10

Dakota Skipper Range in North Dakota

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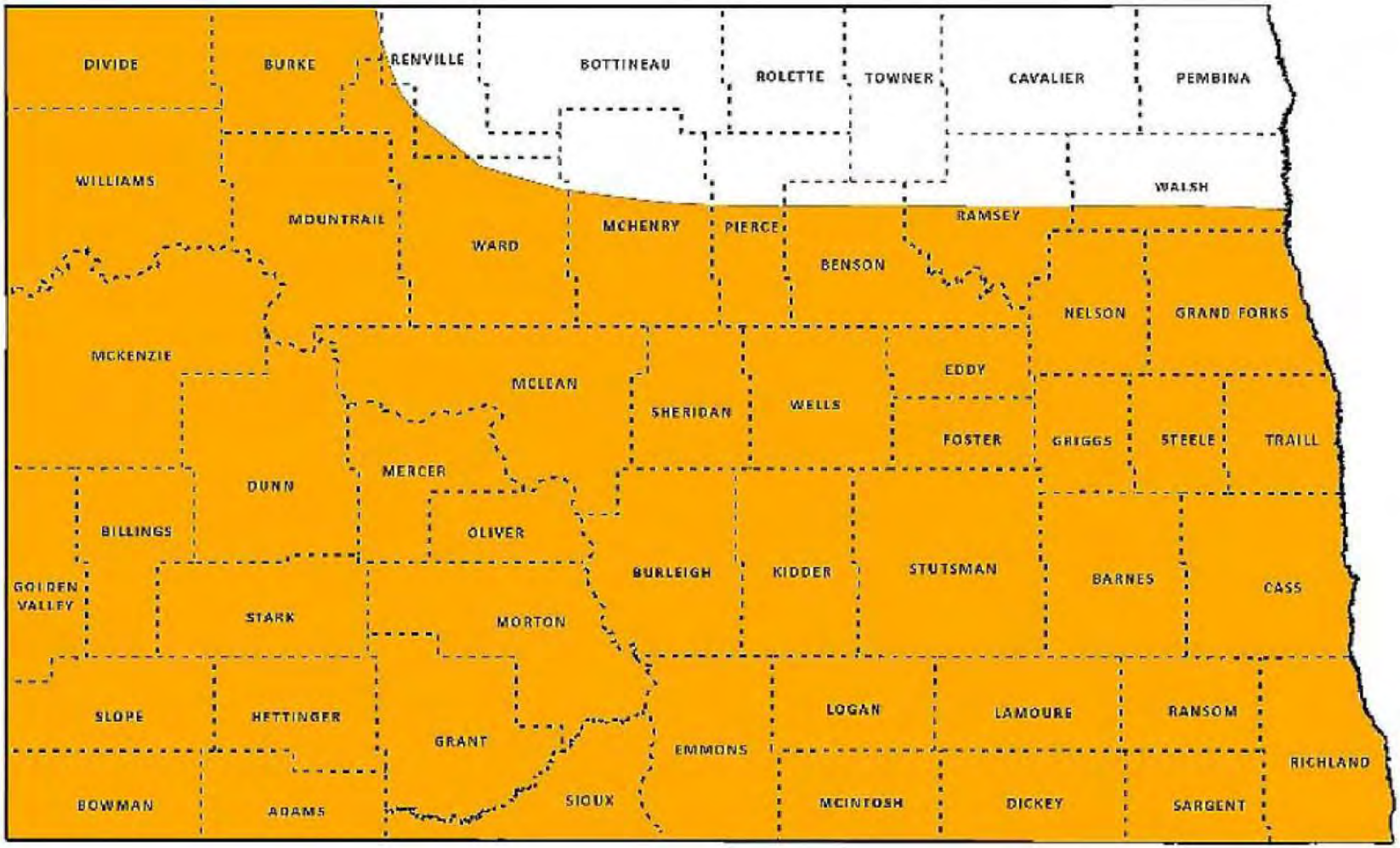

N

0 25 50 100

Miles

Legend

Primary Range

Figure 11

Western Regal Fritillary Range in North Dakota

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