United States Department of the Interior

FISH AND WILDLIFE SERVICE
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Lakewood, Colorado 80228

In Reply Refer to:
FWS/R6

DEC 23 2019

Ms. Kim Prill
Bureau of Land Management
Montana Dakotas State Office
5001 Southgate Drive
Billings, Montana 59101

Dear Ms. Prill:

On September 30, 2019, the Bureau of Land Management (BLM), in coordination with the Western Area Power Administration (WAPA), the Rural Utilities Service (RUS), and the U.S. Army Corps of Engineers (USACE) (Federal agencies), requested initiation of formal consultation for the effects of the proposed Keystone XL pipeline Project (Project), proposed by TC Energy (formerly known as TransCanada) Keystone Pipeline, LP (Keystone), under section 7 of the Endangered Species Act (ESA) of 1973 (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.) for the federally listed endangered American burying beetle (ABB) (Nicrophorus americanus). The Project involves the proposed construction and operation of an 882-mile-long pipeline, including ancillary facilities, temporary workspaces, construction camps, access roads, and other aboveground facilities, including powers stations and power lines. Accordingly, this memo transmits the final Biological Opinion (BO) on the effects of the Federal agencies' actions as described in the November 26, 2019 amended Biological Assessment (BA) (BLM 2019, entire). The Federal agencies intend to rely on this document to fulfill their obligations under section 7 of the ESA.

In its BA, the Federal agencies have considered the effects of the Project on 10 federally listed species and designated critical habitat and has made several preliminary determinations of effect based on: (1) correspondence with the U.S. Fish and Wildlife Service (Service), participating Federal agencies, and state wildlife agencies; (2) habitat requirements and the known distribution of these species within the Project area; (3) habitat analyses and field surveys that were conducted for these species from 2008 through 2019; (4) conservation measures committed to in the BA and BO, and (5) the Service whooping crane (Grus americana) public sightings database (Service 2019), and telemetry data collected by the U.S. Geological Survey and provided by the Nebraska Ecological Services Office in December of 2018 (Service 2017). Potential effects associated with electrical infrastructure for the proposed pipeline have also been assessed within the BA, based on the best available data.

Areas along proposed power line routes have not yet been field surveyed for the presence of protected species or their habitats; therefore, the potential for each species to occur along power line routes was evaluated based on a review of aerial imagery and on reviews of species occurrence records in state databases (NNHP 2019, entire; SDNHP 2019, entire). In addition to areas having documented occurrences, an area was determined to have potential for presence of a listed species where it contains one or more land cover type(s) serving as potentially suitable habitat for the species (forest, sandbar, etc., depending on species) and is within the known current range of that species. A summary of the species included in the analysis and an effects determination is provided below (Table 1).

The Service concurs with the determinations (see p. 9, Table 1.4-1 of the BA) made by the Federal agencies that the Project may affect but is not likely to adversely affect the endangered black-footed ferret (Mustela nigripes), interior least tern (Sterna antillarum), whooping crane, pallid sturgeon (Scaphirhynchus albus), and topeka shiner (Notropis topeka); and the threatened piping plover (Charadrius melodus), rufa red knot (Calidris canutus rufa), and western prairie fringed orchid (Platanthera praeclara). A detailed discussion of factors contributing to our concurrence with the above not likely to adversely affect (NLAA) and may affect determinations is included within the BA and are also summarized in the table below (Table 1). A summary of species habitat surveys conducted for the Project is included page 10-11 in Table 1.4-2 of the BA (BLM 2019).

Additionally, the Federal agencies determined that the proposed project may affect the threatened Northern long-eared bat (Myotis septentrionalis), but rely on the Service's January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions to fulfill its section 7(a)(2) consultation obligation. Additional information for this species and consultation is described in Introduction section of the BO.

Table 1. ESA Section 7 Determinations and Service Concurrence.

Species	ESA Section 7 Determination	Service Concurs	Rationale	Summary of Conservation Measures[1]
Interior least tern	Not Likely to Adversely Affect	Yes	This determination is based on Keystone's plan to use horizontal directional drill (HDD) when crossing the Missouri, Platte, Elkhorn, Niobrara, Cheyenne, and Yellowstone rivers and Keystone's and electric power providers' commitment to follow conservation measures identified by the Service. Specifically, pre-construction surveys to identify nesting least terns within 0.25 miles of the proposed river crossings and the commitment to halt construction should nesting individuals be identified, would avoid effects on nesting interior least terns. While migrating least terns may encounter construction activities during spring and fall migration, effects on potentially suitable habitat are not expected due to the use of HDD. Although new electric power lines would increase the collision and predation potential for interior least terns, none of the proposed power lines would overlap suitable nesting or foraging habitat, and only a small portion of one power line, co-located on existing structures, would approach within 1 mile of potentially suitable habitat. Installation of bird flight diverters (BFDs) may incidentally	• Keystone will complete crossings of major rivers and riverine habitat using HDD, resulting in a pipeline burial depth of 25 feet or greater, regardless of the season. • Keystone will implement measures identified in the HDD contingency plan, including monitoring of the HDD bore, monitoring downstream of the HDD site for evidence of drilling fluids, and mitigation measures should a frac-out occur. Frac-out is the unintentional return of drilling fluids to the surface during HDD. • Where practicable, Keystone will maintain vegetative screening at HDD sites to prevent disturbance of interior least terns. • Should HDD activities occur at night, Keystone will down-shield lights when the site is within 0.25 mile of potentially suitable habitat and vegetative screening is lacking. • Keystone will conduct pre-construction presence/probable absence surveys of pipeline crossings within 0.25 mile of potentially suitable breeding habitat at the Platte, Elkhorn, and Niobrara rivers in Nebraska; the Cheyenne River in South Dakota; and the Yellowstone River in Montana during the interior least tern nesting season (April 15 to September 1) to ensure that there are no nesting pairs within 0.25 mile of the construction area. If interior least tern nests are found at the crossings, Keystone will: (1) adhere to a 0.25-mile buffer of no pipeline construction activity and (2) continue to monitor nests if any are within 0.25 mile of the construction footprint until young have fledged.

[1] Conservation Measures will be implemented by Keystone and/or the electric power providers, as specified, as part of its Project

Species	ESA Section 7 Determination	Service Concurs	Rationale	Summary of Conservation Measures[1]
			reduce the risk of other bird species, including interior least terns.	• Keystone will conduct daily surveys for nesting terns during the nesting season when construction activities occur within 0.25 mile of potential nesting habitat. • If nesting terns are present, Keystone will make minor adjustments to the pipeline corridor, if practicable, to avoid nesting interior least terns, in coordination with the Service. This may involve shifting the pipeline corridor away from nests to avoid disturbances to interior least tern nests or other modifications depending on the circumstances. • To the extent practicable, Keystone will conduct construction activities mostly during daytime hours and will comply with any local noise regulations. • Keystone will properly equip construction equipment with mufflers to lessen noise impacts. • Keystone will implement a project-specific Spill Prevention, Control, and Countermeasure (SPCC) Plan (Appendix D of the BA). • Keystone will mark and maintain a 100-foot buffer from river crossings, free from hazardous materials, fuel storage, and vehicle fuel transfers. These buffers will be maintained during construction except when fueling and refueling the water pump near the river edge, which is required for the HDD crossing and hydrostatic test water withdrawal. Water pump fueling will be completed by trained personnel and will use secondary containment; a spill kit will be onsite. • Keystone will conduct refueling and lubrication of construction equipment in uplands and greater than 100 feet from streams and wetlands. Where this is not possible, designated personnel with special training in refueling, spill containment, and cleanup will conduct these activities.

Species	ESA Section 7 Determination	Service Concurs	Rationale	Summary of Conservation Measures[1]
				• Keystone will perform all equipment maintenance and repairs in upland locations at least 100 feet from waterbodies and wetlands. • Keystone will park all equipment at least 100 feet from a watercourse or wetland overnight, if possible. • Keystone will not wash equipment in streams or wetlands. • Keystone will conduct construction and restoration activities to allow for prompt and effective cleanup of spills of fuel and other hazardous materials. • Keystone will ensure each construction crew and cleanup crew will have sufficient tools and materials on hand to stop leaks, including supplies of absorbent and barrier materials that will allow for rapid containment and recovery of spilled materials. • Keystone will ensure water withdrawal for hydrostatic testing will be less than 10 percent of the baseline daily flow. • Keystone will minimize temporary water reductions by withdrawing only the volume of water needed for hydrostatic testing as outlined in its permits. Water will be returned to its source within a 30-day period except where the hydrostatic test water is used to test multiple spreads. At the conclusion of hydrostatic testing, the remaining water will be returned to the source. • During Keystone's aerial surveillance, aircraft will maintain at least 1,000 feet of elevation. • If construction of power lines occurs during the interior least tern nesting season, Keystone will conduct surveys of potentially suitable riverine and/or sand pit nesting habitat within 0.25 mile of new power lines within 2 weeks of construction to determine presence of nesting pairs. If nesting interior least terns are present, Keystone will cease construction until chicks fledge from the site.

Species	ESA Section 7 Determination	Service Concurs	Rationale	Summary of Conservation Measures[1]
				• Electric power providers will install anti-perching measures on all structures within 0.1 mile of either side of the proposed crossings of the Platte, Elkhorn, Niobrara, Cheyenne, Yellowstone, Milk and Missouri rivers.
Piping plover	Not Likely to Adversely Affect	Yes	This determination is based on Keystone's plan to use HDD when crossing the Missouri, Platte, Elkhorn, Niobrara, Cheyenne, and Yellowstone rivers and Keystone's and electric power providers' commitment to follow conservation measures identified by the Service. Specifically, pre-construction surveys to identify nesting piping plovers within 0.25 miles of the proposed river crossings and the commitment to halt construction should nesting individuals be identified, would avoid effects on nesting piping plovers. While migrating piping plovers may encounter construction activities during spring and fall migration, effects on potentially suitable habitat are not expected due to the use of HDD. Although new electric power lines would increase the collision and predation potential for piping plovers, none of the proposed power lines would overlap suitable nesting or foraging habitat, and only a small portion of one power line, co-located on existing structures, would approach within 1 mile of potentially suitable habitat. Installation of BFDs may incidentally	• Keystone will complete crossings of major rivers and riverine habitat using HDD, resulting in a pipeline burial depth of 25 feet or greater, regardless of the season. • Keystone will implement measures identified in the HDD contingency plan, including monitoring of the HDD bore, monitoring downstream of the HDD site for evidence of drilling fluids, and mitigation measures should a frac-out occur. • Where practicable, Keystone will maintain vegetative screening at HDD sites to prevent disturbance of piping plovers. • Should HDD activities occur at night, Keystone will down-shield lights when the site is within 0.25 miles of potentially suitable habitat and vegetative screening is lacking. • Keystone will conduct pre-construction presence/probable absence surveys of pipeline crossings within 0.25 mile of potentially suitable breeding habitat at the Platte, Elkhorn, and Niobrara rivers in Nebraska; the Cheyenne River in South Dakota; and the Yellowstone River in Montana during the piping plover nesting season (April 15 to September 1) to ensure that there are no nesting pairs within 0.25 mile of the construction area. If piping plover nests are found at the crossings, Keystone will: (1) adhere to a 0.25-mile buffer of no pipeline construction activity and (2) continue to monitor nests if any are within 0.25 mile of the construction footprint until young have fledged.

Species	ESA Section 7 Determination	Service Concurs	Rationale	Summary of Conservation Measures[1]
			reduce the risk of other bird species, including piping plovers.	• Keystone will conduct daily surveys for nesting piping plovers during the nesting season when construction activities occur within 0.25 mile of potential nesting habitat. • If nesting piping plovers are present, Keystone will make minor adjustments to the pipeline corridor, if practicable, to avoid nesting plovers, in coordination with the Service. This may involve shifting the pipeline corridor away from nests to avoid disturbances to piping plover nests or other modifications depending on the circumstances. • To the extent practicable, Keystone's construction within 0.25 mile of a piping plover nest will occur mostly during daytime hours and will comply with any local noise regulations. • Keystone's construction equipment will be properly equipped with mufflers to lessen noise impacts. • Keystone will implement a project-specific SPCC Plan. • Keystone will mark and maintain a 100-foot buffer from river crossings, free from hazardous materials, fuel storage, and vehicle fuel transfers. These buffers will be maintained during construction except when fueling and refueling the water pump near the river edge that is required for the HDD crossing and hydrostatic test water withdrawal. Water pump fueling will be completed by trained personnel and will use secondary containment and a spill kit will be onsite. • Keystone will conduct refueling and lubrication of construction equipment in uplands and greater than 100 feet from streams and wetlands. Where this is not possible, designated personnel with special training in refueling, spill containment, and cleanup will conduct these activities.

Species	ESA Section 7 Determination	Service Concurs	Rationale	Summary of Conservation Measures[1]
				• Keystone will perform all equipment maintenance and repairs will be performed in upland locations at least 100 feet from waterbodies and wetlands. • Keystone will park all equipment will be parked at least 100 feet from a watercourse or wetland overnight, if possible. • Keystone will ensure equipment will not be washed in streams or wetlands. • Keystone's Construction and restoration activities will be conducted to allow for prompt and effective cleanup of spills of fuel and other hazardous materials. • Keystone will ensure that each construction crew and cleanup crew will have sufficient tools and materials on hand to stop leaks, including supplies of absorbent and barrier materials that will allow for rapid containment and recovery of spilled materials. • Keystone will ensure that water withdrawal for hydrostatic testing will be less than 10 percent of the baseline daily flow. • Keystone will minimize temporary water reductions by withdrawing only the volume of water needed for hydrostatic testing as outlined in its permits. Water will be returned to its source within a 30-day period except where the hydrostatic test water is used to test multiple spreads. At the conclusion of hydrostatic testing, the remaining water will be returned to the source. • During aerial surveillance, Keystone's aircraft will maintain at least 1,000 feet of elevation. • If construction of power lines occurs during the piping plover nesting season, Keystone or the electric power providers will conduct surveys of potentially suitable riverine and/or sand pit plover nesting habitat within 0.25 mile of new power lines within 2 weeks of construction to

Species	ESA Section 7 Determination	Service Concurs	Rationale	Summary of Conservation Measures[1]
				determine presence of nesting pairs. If nesting plovers are present, construction will cease until all chicks fledge from the site. • Electric power providers will install anti-perching measures on all structures within 0.1 mile of either side of the proposed crossings of the Platte, Elkhorn, Niobrara, Cheyenne, Yellowstone, Milk and Missouri rivers. • Should potentially suitable breeding or foraging habitat for piping plover be identified near the proposed Project at a later time, power lines near breeding habitat (and within 0.25 mile of each side) and lines that will be built between rivers and sand and gravel mining areas, electric power providers will mark power lines with BFDs to reduce potential injury or mortality to piping plovers. • Electric power providers will route power lines to avoid construction within 0.50 mile of potentially suitable piping plover nesting habitat in alkali wetlands in Montana. • NorVal Electric Cooperative will install BFDs in all locations where the power line to PS-10 comes within 0.25 mile of either side of the Milk River. Additionally, BFDs will be installed for 0.25 mile on either side of two unnamed reservoirs crossed by the proposed power line to PS-10.
Rufa red knot	Not Likely to Adversely Affect	Yes	Adverse effects on rufa red knot are unlikely based on (1) the proposed pipeline would not affect stopover habitat; (2) there is very little potentially suitable stopover habitat proximal to the proposed power lines; (3) rufa red knot are extremely uncommon in the Central Flyway; and (4) the increase in power lines	• Keystone will complete crossings of major rivers and riverine habitat using HDD, resulting in a pipeline burial depth of 25 feet or greater, regardless of the season. • Keystone will implement measures identified in the HDD contingency plan, including monitoring of the HDD bore, monitoring downstream of the HDD site for evidence of drilling fluids, and mitigation measures should a frac-out occur.

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			associated with pump stations is 0.1 percent of existing large power lines. Therefore, no measurable effects are anticipated for the rufa red knot as a result of the Project.	• Keystone will implement a project-specific SPCC Plan. • To the extent practicable, Keystone's construction will occur mostly during daytime hours and will comply with any local noise regulations. • Keystone's construction equipment will be properly equipped with mufflers to lessen noise impacts. • Keystone will mark and maintain a 100-foot buffer from river crossings, free from hazardous materials, fuel storage, and vehicle fuel transfers. These buffers will be maintained during construction except when fueling and refueling the water pump near the river edge that is required for the HDD crossing and hydrostatic test water withdrawal. Water pump fueling will be completed by trained personnel and will use secondary containment and a spill kit will be onsite. • Keystone will refuel or lubricate construction equipment in uplands and greater than100feet from streams and wetlands. Where this is not possible, designated personnel with special training in refueling, spill containment, and cleanup will conduct these activities. • Keystone will perform all equipment maintenance and repairs in upland locations at least 100 feet from waterbodies and wetlands. • Keystone will park all equipment at least 100 feet from a watercourse or wetland overnight, if possible. • Keystone will not wash equipment in streams or wetlands. • Keystone's construction and restoration activities will be conducted to allow for prompt and effective cleanup of spills of fuel and other hazardous materials. • Keystone will ensure each construction crew and cleanup crew will have sufficient tools and materials on hand to stop leaks, including supplies of absorbent and barrier materials that will allow for rapid containment and

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				recovery of spilled materials. • Keystone will ensure water withdrawal for hydrostatic testing will be less than 10 percent of the baseline daily flow. • Keystone will minimize temporary water reductions by withdrawing only the volume of water needed for hydrostatic testing as outlined in their permits. Water will be returned to its source within a 30-day period except where hydrostatic test water is used to test multiple spreads. At the conclusion of hydrostatic testing, the remaining water will be returned to the source.
Whooping crane	Not Likely to Adversely Affect	Yes	No documented whooping crane historical or telemetry observations have been identified within 1.5 miles of the action area and only one record is within 3.5 miles. Given (1) the limited number of individuals, (2) the lack of historical or recent telemetry records in the action area despite the long-term nature of the historical data and the fact that the telemetry data are not dependent on human observation, (3) the low probability of a collision during migration, and (4) the proposed conservation measures developed in conjunction with the Service, adverse effects are unlikely. BLM used the Service's "A Review and Critique of Risk Assessments Considered by the U.S. Fish and Wildlife Service Regarding the Collision Risk for Whooping Cranes with NPPD's R-Project"	• Keystone will complete crossings of major rivers and riverine habitat using HDD, resulting in a pipeline burial depth of 25 feet or greater, regardless of the season. • Keystone will implement measures identified in the HDD contingency plan, including monitoring of the HDD bore, monitoring downstream of the HDD site for evidence of drilling fluids, and mitigation measures should a frac-out occur. • Should HDD activities occur at night, Keystone will down-shield lights during the spring and fall whooping crane migration seasons in areas that provide potentially suitable habitat. • Where practicable, Keystone will maintain vegetative screening at HDD sites to prevent disturbance of whooping cranes. • During spring (March–May) and fall (October–November) whooping crane migration periods, Keystone's environmental monitors will complete a daily brief survey of any wetland or riverine habitat areas potentially used by whooping cranes in the morning and afternoon before starting equipment and following the Whooping Crane Survey Protocol previously developed

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			(https://www.fws.gov/mountain-prairie/es/nebraska/library/USFWS-Whooping-Crane-Whitepaper-final-w-Attachments.pdf), dated January 30, 2019 to develop a collision risk assessment and determined risks to whooping cranes would be very low.	by the Service and Nebraska Game and Parks Commission [NGPC] (NGPC and Service 2017). If whooping cranes are sighted, the environmental monitor will immediately contact the Service and respective state agency in Nebraska, South Dakota, and/or Montana for further instruction and require that all human activity and equipment start-up be delayed. Work could proceed if whooping crane(s) leave the area. The compliance manager will record the sighting, bird departure time, and work start time on the survey form. The Service will notify the compliance manager of whooping crane migration locations during the spring and fall migrations through information gathered from the whooping crane tracking program. • Keystone will re-vegetate disturbed areas (particularly within riparian zones and in wetland habitats) in accordance with the Construction, Mitigation, and Reclamation Plan (CMRP) and U.S. Army Corps of Engineers (USACE) permit requirements. • Keystone's use of helicopters within 0.5 mile of any whooping crane(s) will be prohibited. • Keystone will prepare and implement a project-specific SPCC Plan. • Keystone will mark and maintain a 100-foot buffer from river crossings, free from hazardous materials, fuel storage, and vehicle fuel transfers. These buffers will be maintained during construction except when fueling and refueling the water pump near the river edge that is required for the HDD crossing and hydrostatic test water withdrawal. Water pump fueling will be completed by trained personnel and will use secondary containment and a spill kit will be onsite.

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				• Keystone will refuel and lubricate construction equipment in uplands and greater than 100 feet from streams and wetlands. Where this is not possible, designated personnel with special training in refueling, spill containment, and cleanup will conduct these activities. • Keystone will perform all equipment maintenance and repairs in upland locations at least 100 feet from waterbodies and wetlands. • Keystone will park all equipment at least 100 feet from a watercourse or wetland overnight, if possible. • Keystone's equipment will not be washed in streams or wetlands. • Keystone's construction and restoration activities will be conducted to allow for prompt and effective cleanup of spills of fuel and other hazardous materials. • Keystone will ensure each construction crew and cleanup crew will have sufficient tools and materials on hand to stop leaks, including supplies of absorbent and barrier materials that will allow for rapid containment and recovery of spilled materials. • Keystone will ensure water withdrawal for hydrostatic testing will be less than 10 percent of the baseline daily flow. • Keystone will minimize temporary water reductions by withdrawing only the volume of water needed for hydrostatic testing as outlined in its permits. Water will be returned to its source within a 30-day period except where the hydrostatic test water is used to test multiple spreads. At the conclusion of hydrostatic testing, the remaining water will be returned to the source. • During aerial surveillance, Keystone's aircraft will maintain at least 1,000 feet of elevation.

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				• Should power lines be adjusted, the electric power provider will site them greater than 5 miles from Designated Critical Habitat and/or documented high-use areas. • Electric Power providers will mark new lines with BFDs within 1 mile of potentially suitable habitat within the 95-percent migration corridor. • Electric Power providers will mark new lines with BFDs near potentially suitable habitat outside the 95-percent migration corridor at the discretion of the local Service Ecological Services Field Office, based on the biological needs of the whooping crane. Thus far, this will include the following: -The power line to PS-09 will be marked with BFDs within 0.25 mile of crossings of the Milk River. -The power line to PS-10 will be marked with BFDs within 0.25 mile of crossings of the Milk River and within 0.25 mile of two unnamed reservoirs crossed by the line. -The power line to PS-12 will be marked with BFDs within 0.25 mile of crossings of the Redwater River and Buffalo Springs Creek. -The power line to PS-14 will be marked with BFDs within 0.25 mile of crossings of Pennel Creek and an unnamed pond in the northwest corner of section 35, township 9 north, range 58 east, in Fallon County, Montana. • Keystone will develop a compliance monitoring plan that requires written confirmation that the power lines have been marked with BFDs and that the markers are maintained in working condition. • Electric power providers will complete daily presence/probable absence surveys in potentially suitable habitat according to the Project's protocol described

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				above if construction occurs during the spring and fall migration periods. Should a whooping crane be sighted within 0.5 mile of a work area, all work will cease until the whooping crane leaves that immediate area. Service and NGPC will be contacted immediately and notified of the presence of whooping crane.
Northern long-eared bat	May Affect, Likely to Adversely Affect, relying on Service's 2016 Programmatic Biological Opinion on the Final 4(d) Rule for the NLEB and Activities Excepted from Take Prohibitions to fulfill its section 7(a)(2) consultation obligation	See Introduction Section of BO for more information	Only known presence of northern long-eared bat (NLEB) in the action area was from four NLEBs fitted with transmitters within 1 mile of Fort Peck spillway. However, these were not maternity roosts. There are no known occupied maternity roost trees, or known occupied hibernacula occur within 1 mile of the action area. The proposed Project "may affect" the northern long-eared bat due to the alteration of approximately 81 acres of potentially suitable habitat. However, the proposed Project relies on the Service's January 5, 2016, Programmatic Biological Opinion on the Final 4(d) Rule for the NLEB and Activities Excepted from Take Prohibitions to fulfill its section 7(a)(2) consultation obligation.	• Keystone will implement measures identified in the HDD contingency plan, including monitoring of the HDD bore, monitoring downstream of the HDD site for evidence of drilling fluids, and mitigation measures should a frac-out occur. • Should HDD activities occur at night, Keystone will down-shield lights. • Where practicable, Keystone will maintain vegetative screening at HDD sites to prevent disturbance of northern long-eared bats. • Keystone will ensure that no tree removal will occur within 0.25 miles of a known occupied hibernaculum. • Keystone will ensure that no tree removal will occur within 150 feet of a known occupied maternity roost tree during the pup season (June 1-July 31) • Keystone will complete pre-construction presence/absence surveys if there is a need to remove trees within potentially suitable habitat within the Project area during the pup season (June 1 to July 31). If required, surveys will be conducted pursuant to local Service field office and state resource agency requirements. The need for additional season tree-clearing restrictions, if any, will be determined in coordination with applicable state and Federal resource agencies, pending survey results. • During aerial surveillance, Keystone's aircraft will maintain at least 1,000 feet of elevation.

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				• Keystone will prepare and implement a project-specific SPCC Plan.
Topeka shiner	Not Likely to Adversely Affect	Yes	Keystone has committed to implementing conservation measures, conducting pre-construction surveys, and avoiding effects on individuals within occupied streams.	• Keystone's crossing of Union Creek will be completed using HDD, resulting in a pipeline burial depth of 25 feet or greater. • Keystone will implement measures identified in the HDD contingency plan, including monitoring of the HDD bore, monitoring downstream of the HDD site for evidence of drilling fluids, and mitigation measures should a frac-out occur. • Keystone will complete pre-construction presence/probable absence surveys of Union and Taylor creeks will be completed during the year of construction. • Keystone will use a dry crossing method or HDD if the Topeka shiner is identified during pre-construction surveys. • Keystone will ensure that water required for HDD operations or hydrostatic testing will be sourced from locations without Topeka shiner presence. • Keystone will maintain at least a 100-foot setback from the water's edge for any HDD drill pads, should the HDD method be used. • Keystone will implement best management practices (BMPs) outlined in the CMRP to prevent and minimize sediment runoff from construction areas from entering receiving streams that may provide potentially suitable Topeka shiner habitat. • Keystone will avoid use of broadcast applications of pesticides or herbicides near water bodies. • Keystone will avoid water depletions within occupied river basins. • Keystone will maintain upstream and downstream fish passage during any stream habitat disturbance.

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				• Keystone will screen the intake end of any water withdrawal pump with mesh having openings no larger than 0.125 inch. Water velocity at the screen will not exceed 0.5 feet per second, and the intake screens will be checked periodically for fish impingement. Should a Topeka shiner become impinged against the screen, all pumping operations will immediately cease and the compliance manager for Keystone will immediately contact the Service to determine if additional protection measures will be required. An environmental inspector will be present every day during water withdrawals to ensure compliance with permit conditions and to ensure that Keystone's commitments are met.
Western prairie fringed orchid	Not Likely to Adversely Affect	Yes	Surveys in 2019 and previous years have demonstrated the probable absence of this species from the pipeline construction corridor. Desktop studies have indicated that it is unlikely that individuals or high-quality habitat would occur in power line corridors. Given that pre-construction surveys will occur and Keystone has committed to implement avoidance and conservation measures, adverse effects are unlikely.	• Keystone or the electric power providers will conduct pre-construction presence/probable absence surveys within potentially suitable habitat that was not previously surveyed, including the power line route to PS-21. Survey results will be submitted to the Service for review. Species presence will be assumed in potentially suitable habitat if surveys cannot be conducted during the flowering period. • Keystone or the electric power providers will conduct pre-construction presence/probable absence surveys in potentially suitable habitat along the power line routes to PS-22 through PS-25, during the appropriate flowering period. The NPPD will delineate and designate areas where western prairie fringed orchid habitat is present as "avoidance areas" where placement of structures and construction traffic will not occur. • Keystone's Project alignment will be adjusted to avoid any identified populations as practicable and/or approved by the landowner.

Species	ESA Section 7 Determination	Service Concurs	Rationale	Summary of Conservation Measures[1]
				• To the greatest extent practicable, Keystone will reduce the width of the construction ROW in areas where western prairie fringed orchid populations have been identified. • Keystone will implement a noxious and invasive weed control program consistent with the CMRP to reduce the potential for spread or invasion of weeds. • Keystone will conduct any necessary herbicide application by spot spraying. • Keystone will restrict use of herbicides within 100 feet of documented western prairie fringed orchid occurrence. • Keystone will minimize the potential for altered hydrology (e.g., surface water flow, infiltration and groundwater levels) in potentially suitable habitat through BMPs outlined in the CMRP. • Keystone will salvage and segregate topsoil appropriately where populations have been identified to preserve native seed sources in the soil for use in revegetation efforts in the ROW. • Keystone will restore wet meadow habitat using a Service- and NGPC-approved seed mix. • Keystone will restore potentially suitable wet meadow habitats following Project construction. • Keystone will monitor restoration of construction-related impacts on wet meadow habitats identified as potentially suitable for the western prairie fringed orchid for a 5-year period. • Keystone has sited aboveground facilities to avoid potentially suitable western prairie fringed orchid wetland habitat. • Keystone will implement a project-specific SPCC Plan. • Keystone will mark and maintain a 100-foot buffer from river crossings, free from hazardous materials, fuel storage, and vehicle fuel transfers.

Species	ESA Section 7 Determination	Service Concurs	Rationale	Summary of Conservation Measures[1]
				These buffers will be maintained during construction except when fueling and refueling the water pump near the river edge that is required for the HDD crossing and hydrostatic test water withdrawal. Water pump fueling will be completed by trained personnel and will use secondary containment and a spill kit will be onsite. • Keystone will refuel and lubricate construction equipment in uplands and greater than100 feet from streams and wetlands. Where this is not possible, designated personnel with special training in refueling, spill containment, and cleanup will conduct these activities. • Keystone will perform all equipment maintenance and repairs in upland locations at least 100 feet from waterbodies and wetlands. • Keystone will park all equipment at least 100 feet from a watercourse or wetland overnight, if possible. • Keystone will not wash equipment in streams or wetlands. • Keystone will conduct construction and restoration activities to allow for prompt and effective cleanup of spills of fuel and other hazardous materials. • Keystone will ensure each construction crew and cleanup crew will have sufficient tools and materials on hand to stop leaks, including supplies of absorbent and barrier materials that will allow for rapid containment and recovery of spilled materials. • Keystone will ensure water withdrawal for hydrostatic testing will be less than 10 percent of the baseline daily flow. • Keystone will minimize temporary water reductions by withdrawing only the volume of water needed for hydrostatic testing as outlined in its permits.

Species	ESA Section 7 Determination	Service Concurs	Rationale	Summary of Conservation Measures[1]
				Water will be returned to its source within a 30-day period except where hydrostatic test water is used to test multiple spreads. At the conclusion of hydrostatic testing, the remaining water will be returned to the source.
Black-footed ferret	Not Likely to Adversely Affect	Yes	No presence of black-footed ferrets (BFF) within the action area; little or no suitable habitat (prairie dog towns) which BFF depend upon would be affected, the Service determined effects on prairie dogs do not effect BFF where its known to occur; BFF is not known to exist outside of known re-introduced locations and surveys are no longer required; closest known reintroduction site is 19 miles from the action area, where a protected reintroduced population exists; there is little to no possibility of the species presence within the action area. Black-tailed prairie dog towns in all of South Dakota have been block-cleared by the Service's Pierre Ecological Services Field Office, meaning the towns no longer contain any wild, free-ranging black-footed ferrets, and activities within these areas that result in the removal of the black-tailed prairie dogs and/or their habitat would no longer be required to meet the Service survey guidelines for black-footed ferrets or undergo consultations under section 7 of the ESA.	• Keystone will provide the Service with the results of Montana prairie dog town surveys and continue to coordinate with the Montana Ecological Services Office to determine the need for black-footed ferret surveys, in accordance with the Black-footed Ferret Survey Guidelines (USFWS 1989). • Keystone will prohibit workers from keeping domestic pets in construction camps and/or worksites. • Keystone will make workers aware of how canine distemper and sylvatic plague diseases are spread (domestic pets and fleas). • Keystone will prohibit workers from feeding wildlife. • Keystone will report concentrations of dead and/or apparently diseased animals (prairie dogs, ground squirrels, others) to the appropriate state and Federal agencies. • Keystone will implement a Project-specific SPCC Plan. • Electrical power providers will implement protection measures to minimize raptor (BFF predators) perching, in accordance with the Avian Power Line Interaction Committee (APLIC), Suggested Practices for Avian Protection on Power Lines (APLIC 1996, 2012). • Big Flat Electric Cooperative will provide immediate notification to the Service in the unlikely event that a black-footed ferret is sighted during construction of the power line to PS-09.

Species	ESA Section 7 Determination	Service Concurs	Rationale	Summary of Conservation Measures[1]
Pallid Sturgeon	Not Likely to Adversely Affect	Yes	Adverse effects to pallid sturgeon are unlikely based on Keystone's plan to use the HDD crossing method for large rivers and Keystone's commitment to follow conservation measures, including restrictions on water withdrawals. None of the potential effects would occur on or near Federal lands, except possibly where the BLM and USACE are involved with the crossing under the Missouri River just below the Fort Peck Project.	• Keystone will use HDD under the Milk, Missouri, Yellowstone, and Platte rivers. • Keystone will use at least a 100-foot setback from the water's edge for the HDD drill pads at the HDD crossings at the Milk, Yellowstone, Missouri, and Platte rivers. • Keystone will contain potential releases during HDD (frac-outs) by BMPs that are described within the HDD contingency plans required for drilled crossings. • Keystone will avoid broadcast applications of pesticides or herbicides within 0.25 miles of water bodies. • Keystone will maintain upstream and downstream fish passage during any stream habitat disturbance. • Keystone will screen the intake end of any water withdrawal pump with mesh having openings no larger than 0.125 inch, a floating surface intake would be used to avoid the benthic habitat used by the sturgeon; water velocity at the screen would not exceed 12 centimeters per second to prevent entrainment of larval fish, and the intake screens would be periodically checked for fish impingement. Should a sturgeon become impinged against the screen, all pumping operations would immediately cease and the compliance manager for Keystone would immediately contact the Service to determine if additional protection measures would be required. • Keystone will avoid water withdrawal from the Milk, Missouri, and Yellowstone rivers for any purpose from May 15 through July 15 of any year to avoid pallid spawning periods and the impingement and entrainment of free embryos and larval pallid sturgeon that drift with the current during that time of year. • Keystone will avoid water withdrawal from the Platte River for any purpose from March 1 through June 30 of any year to avoid pallid spawning periods and the

Species	ESA Section 7 Determination	Service Concurs	Rationale	Summary of Conservation Measures[1]
				impingement and entrainment of free embryos and larval pallid sturgeon that drift with the current during that time of year. • Keystone would take care during the discharge to prevent erosion or scouring of the waterbody bed and banks to avoid impacts to spawning habitat for the species. Hydrostatic test discharge would be in upland locations near the source of the water. Water would be discharged over several days and through a hay bale apparatus or other velocity reduction and erosion control device. • Keystone will avoid temporary water reductions based on Keystone's plan to withdraw the volume needed and to return water back to its source within a 30-day period for the Platte River. • Keystone will cross major rivers using the HDD method with a pipeline burial depth of 25 feet or greater below the river bed to avoid direct impacts to habitat. • Proposed HDD entry and exit points are more than 600 feet from the Platte River; if these points are changed, Keystone would maintain at least a 100-foot setback from the water's edge. • Keystone will implement measures identified in a required HDD contingency plan, including monitoring of the directional drill bore, monitoring downstream for evidence of drilling fluids and mitigation measures to address a frac-out should one occur. • Keystone's major river crossings are subject to an intensive integrity management program stipulated by the USDOT (Integrity Management Rule, 49 CFR 195) and require heavier wall pipe be used for the HDD method.

The Service anticipates that the Project may result in minor or temporary disturbance to the listed species or their habitat described in Table 1 within the action area. However, adverse effects to these species are not anticipated due to: (1) the avoidance of the species' suitable habitat; (2) the low likelihood of disturbance that may occur as a result of the proposed project; and (3) the application of conservation measures intended to avoid/minimize impacts for each of these species and associated compliance monitoring by Keystone (BLM 2019, Appendix D). Therefore, these species will not be addressed further in the attached Biological Opinion.

The Service concurs with the determination that the Project may affect and is likely to adversely affect the ABB. Therefore, the final BO analyzes the effects of the entire Project on the ABB. This includes all consequences to ABB that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. No critical habitat has been designated for the ABB. The ITS serves to enumerate or identify the amount or extent of take "caused by" all the effects of the action and exempts the action agencies from the prohibitions against that take under section 9 of the ESA. Here, take of ABB would not occur "but for" the proposed Federal actions. Given the scope of the effects of the Federal actions, it follows that the majority of the take exempted for the Federal agencies is occurring on lands that are outside the jurisdiction of the Federal agencies, or is related to activities undertaken by the applicant not under the authority of a Federal agency.

Because the majority of take associated with the proposed Project will occur on non-federal lands and is outside the jurisdiction of the Federal agencies, Keystone has elected to apply for an incidental take permit and develop a habitat conservation plan for the ABB. Therefore, the incidental take permit will authorize the incidental take that results from Keystone's covered activities. As appropriate, the Service may utilize the analysis in this BO when it processes the application for an incidental take permit for Keystone.

If you have any questions regarding this matter, please contact me at the letterhead address or by phone at (303) 236-4774.

Sincerely,

Colorado and Nebraska Field Supervisor

Enclosure

cc: Rebecca Latka, Regulatory Field Support, U.S. Army Corps of Engineers
Heath Kruger, Chief of Natural Resources, U.S. Army Corps of Engineers
Mark A. Gabriel, Administrator and Chief Executive Officer, Western Area Power Administration
Jody Sundsted, Senior Vice President and Regional Manager, Upper Great Plains Region, Western Area Power Administration
Dennis Rankin, Environmental Protection Specialist, Rural Utilities Service

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BIOLOGICAL OPINION ON THE EFFECTS OF THE PROPOSED KEYSTONE XL PIPELINE TO THE FEDERALLY ENDANGERED AMERICAN BURYING BEETLE

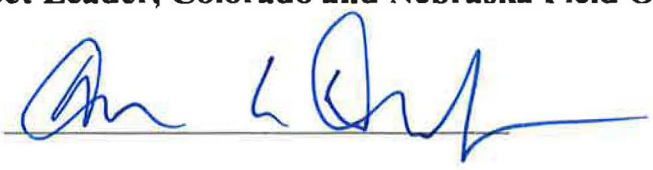
Nicrophorus americanus

TAILS No. 06E22000-2020-F-0052

Consulting Agencies:
Bureau of Land Management
Western Area Power Administration
Rural Utilities Service
U.S. Army Corps of Engineers

Biological Opinion Prepared by:
U.S. Fish and Wildlife Service

Project Leader, Colorado and Nebraska Field Office



Date DEC 23 2019

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INTRODUCTION

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion (BO) on the proposed Keystone XL Pipeline Project (Project) under section 7 of the Endangered Species Act (ESA) based on our review of the Bureau of Land Management's (BLM) Biological Assessment for all Federal agency actions associated with the Project proposed by the applicant, TC Energy (formerly known as TransCanada) Keystone Pipeline, LP (Keystone). A Biological Assessment (hereafter referred to as the BA) was submitted by the BLM on September 30, 2019. An amended BA was submitted by BLM on November 27, 2019 (BLM 2019). This BO is prepared in accordance with section 7 of the ESA (16 U.S.C. 1531-1544, 87 Stat. 884), as amended).

The purpose of section 7 consultation is to ensure that any action authorized, funded, or carried out by the Federal government is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat of the species. Consistent with the regulations at 50 C.F.R. §402.12(f), the BA analyzed the effects of the entire action, regardless of whether the actions are Federal or non-federal. For this Project, the Federal actions are by BLM, Western Area Power Administration (WAPA), Rural Utilities Service (RUS), and the U.S. Army Corps of Engineers (USACE). Although this BO evaluates effects on the federally listed American burying beetle [*Nicrophorus americanus*], (hereafter referred to as "ABB" or "beetle") described in the BA for the entire Project, the area where the adverse effects and incidental take of the ABB occurs is on non-federal lands and primarily outside the scope of Federal agency authority. Keystone has decided to develop a Habitat Conservation Plan (HCP) to support its application to the Service for a section 10(a)(1)(B) incidental take permit for the ABB for their activities on non-federal lands or lands without a Federal nexus. Keystone has submitted a draft HCP to the Service for review and technical assistance. The HCP and section 10 process is separate from this BO, though the Service might utilize the analysis in this BO, as appropriate, when it processes the permit application.

The Federal agencies determined that the Project may affect the threatened northern long-eared bat (NLEB; *Myotis septentrionalis*). The Service's 2016 final 4(d) rule for NLEB (81 FR 1900) prohibits incidental take only under the following circumstances: 1) if it occurs within a hibernaculum, or 2) if it results from tree removal activities and the activity occurs within 0.25 mile (0.4 km) of a known hibernaculum; or, the activity cuts or destroys a known, occupied maternity roost tree or other trees within a 150 foot radius from the maternity roost tree during the pup season from June 1 through July 31. No actions or impacts from the Project are anticipated to NLEB hibernaculum. Keystone has committed that 1) no tree removal will occur within 0.25 miles of a known occupied NLEB hibernaculum, 2) no tree removal will occur within 150 feet of a known occupied NLEB roost tree during the pup season (June 1-July 31), and 3) if there is a need to remove trees during the pup season, pre-construction presence/absence surveys will be completed by Keystone, pursuant to local Service field office and state resource agency requirements (see NLEB row in Table 1 of the BO Transmittal Letter). Therefore, the actions associated with the Project would not cause prohibited incidental take to the NLEB. To fulfill the Federal agencies' section 7(a)(2) consultation obligation, this Project relies on Service's January 5, 2016, Programmatic Biological Opinion on the "Final 4(d) Rule

for the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions (Programmatic Biological Opinion) (Service 2016, entire)." The Programmatic Biological Opinion provides a framework for streamlined section 7 consultation for other Federal actions that may affect the NLEB and are consistent with the provisions of the 4(d) rule. The Service has determined that the Federal agencies have appropriately utilized the framework within the Programmatic Biological Opinion, and therefore does not further discuss NLEB in this BO.

This BO is based on best scientific and commercial data available including information provided in the BA (BLM 2019), the Supplemental Draft Environmental Impact Statement (SDEIS), draft HCP (Keystone 2019), telephone conversations, meetings, field investigations, and other sources of information.

CONSULTATION HISTORY

The Service's Colorado/Nebraska Ecological Services Office in Lakewood, Colorado, is delegated the lead office to conduct the consultation with BLM. However, other Service Ecological Services Field Offices in Nebraska, Montana, North Dakota, South Dakota, and Kansas have been actively participating as part of the Project team during part or all of the informal and formal consultation, and assisted in drafting or reviewing consultation documents throughout the consultation. Consultation for the Project has been ongoing over an extended time period, and included a previous BA submitted by the Department of State in June 2012 (Department 2012), and a BO issued by the Service in 2013 (Service 2013, entire). The 2013 BO and 2012 BA on which it was based, and subsequent analysis for additional species, are no longer in effect; the Department of State and the Service withdrew the 2012 BA and 2013 Biological Opinion on May 6, 2019. For a complete list summarizing agency correspondence, species-specific survey information, and continued coordination with the Service regarding biological surveys and determination of biological effects for the Project, see section 1.3, Consultation History, and Appendix A, Letters of section 7 Consultation and Supporting Communications of the BA (BLM 2019, pp. 1-8; Appendix A).

Since May 2019, the Service, BLM, WAPA, RUS, USACE, and the Department of State has held twice weekly conference calls to discuss the consultation. A meeting with the Service, BLM, WAPA, RUS, and USACE was held on September 19-20, 2019, to discuss remaining issues associated with the development of a BA. On September 30, 2019, BLM and the additional Federal agencies submitted a BA to the Service with a letter requesting initiation of formal consultation. On November 27, 2019, BLM submitted an amended BA (BLM 2019) to the Service to update information provided in the previous BA.

Updates to the Project and Analysis

Since the 2013 BO, several issues related to the Project have been modified. The Department of State no longer has an action requiring section 7 consultation. However, Federal actions involving the BLM, WAPA, RUS, and the USACE, still require section 7 consultation. When a particular action involves more than one Federal agency, the consultation and conference responsibilities may be fulfilled through a lead agency for section 7 consultation. The Service is notified of the designation in writing by the lead agency (50 CFR 402.07). The BLM has not

notified the Service in writing that it is assuming the designation of lead agency, but has provided the Service the information necessary to complete section 7 consultation for the Federal actions associated with this Project (BLM 2019). A portion of the Project in Nebraska has been rerouted to avoid impacts to sensitive areas and to maximize the use of existing rights of way (ROWs). This new route segment, designated as the Mainline Alternative Route (MAR), is discussed in detail in the 2018 MAR Draft SEIS (Department 2018, entire). The Project footprint through Montana and South Dakota, and the 60-acre pipe yard in North Dakota, are essentially the same as that reviewed and assessed in the 2012 BA and 2013 BO for the previously proposed project.

The BA (BLM 2019) includes the most recent species survey information. This also included additional whooping crane public sightings and telemetry data, and assessment of effects to any listed species as a result of new information. The Project includes updated standard practices related to ABB conservation measures based on the Service's most recent recommendations. Efforts to "capture and relocate" ABB near the Project footprint are no longer considered a beneficial practice for reducing harm to ABB (see additional detail in CONSERVATION MEASURES section of this BO). While this practice was proposed and incorporated into the 2013 BO and 2012 BA to reduce ABB mortality (anticipated as harassment instead), it is no longer proposed as part of this Project.

The BA (BLM 2019, pp. 116-118) also considered updated information from Hoback and Conley (2014, entire) which suggested changes in temperature could impact ABB overwintering behavior and survival. In the 2013 BO, incidental take was estimated as a one-time permanent impact for the pipeline's operations in the right-of-way. However, the BA (BLM 2019, p. 124) anticipated and estimated annual mortality from temperature changes due to pipeline operations over the entire duration of the 46 years of the Project after restoration is completed (four years). This results in take estimates during operations 46 times larger than those that would be expected using similar data and methods from the 2013 BO. Additionally, methods of calculating ABB density from survey efforts have been updated since the 2013 BO. ABB density calculations no longer include a habitat quality weighting factor (i.e., a multiplier used to account for habitat quality at location of survey), as densities are calculated using trapping results in mostly high-quality habitats (prime and good). The Service therefore determined that ABB densities are already conservatively high and do not require additional weighting based on habitat quality. The estimate of individuals affected per acre is intended to be conservative. Further information on the type of effects and estimates for take are provided in the EFFECTS OF THE ACTION and INCIDENTAL TAKE STATEMENT in this BO.

BIOLOGICAL OPINION

DESCRIPTION OF PROPOSED ACTION

As defined in the ESA section 7 regulations (50 CFR 402.02), "action" means "all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas." Examples of Federal actions include, but are not limited to: (a) actions intended to conserve listed species or their habitat; (b) the promulgation of

regulations; (c) the granting of licenses, contracts, leases, easements, rights-of-way, permits, or grants-in-aid; or (d) actions directly or indirectly causing modifications to the land, water, or air.

Proposed Federal Actions

Several Federal agencies are involved in some capacity with the Project. The BLM, the WAPA, the RUS, and the USACE intend to rely on this document to comply with section 7 of the ESA. The following sections describe the proposed Federal actions associated with the Federal agencies described above. Figure 1 indicates the currently known approximate locations that are subject to the proposed Federal actions.

BLM

The BLM's proposed Federal action evaluated in this BO is the BLM's decision to issue a ROW grant and Temporary Use Permit to construct, operate, maintain and decommission a crude oil pipeline and related facilities on Federal lands in compliance with the Mineral Leasing Act, BLM ROW regulations, and other applicable Federal laws. In coordination and concurrence with USACE. The BLM will decide whether to approve, approve with modification, or deny issuance of a ROW grant and Temporary Use Permit for the proposed Keystone XL pipeline system, and if approved, under what terms and conditions. The proposed pipeline ROW would cross approximately 44.4 miles of BLM land in Montana and would also cross approximately 1.88 miles of USACE land at the Missouri River at Fort Peck, Montana.

WAPA

Part of WAPA's mission is to provide open access to transmission services across the Federal power transmission system so that energy producers can transmit power to their customers. Any entity requesting transmission services across the Federal grid system must submit an application for interconnection. WAPA has received interconnection applications from local power cooperatives to serve the electrical needs of Pump Station (PS)-09 through PS-13 and PS-17 through PS-19, as well as PS-21.

The proposed interconnections to WAPA's transmission system are Federal actions. As a result, WAPA must evaluate the environmental impacts of entering into an interconnection agreement and completing any necessary work to WAPA's infrastructure to accommodate the interconnections as well as any interrelated non-federal actions (e.g., construction of power lines). The following provides a summary of WAPA's Federal activities:

- PS-09—Construction and ownership of a new substation (the Bowdoin Substation) and interconnection;
- PS-10—An expansion of the existing Fort Peck Substation and interconnection;
- PS-11—Construction and ownership of a new substation and interconnection;
- PS-12—Interconnection and minimal work within the existing Circle Substation footprint to accommodate the interconnection;
- PS-13—An expansion of the existing O'Fallon Substation and interconnection;

- PS-17—Interconnection and minimal work within the existing Maurine Substation footprint to accommodate the interconnection;
- PS-18—Interconnection and minimal work within the existing Philip Substation footprint to accommodate the interconnection;
- PS-19—Expansion of the existing Midland Substation and interconnection; and
- PS-21—Rebuilding of the existing Gregory Substation and interconnection.

Additional information and analysis related to the power lines that would connect to the above-mentioned substations is provided in the analysis to follow.

RUS

RUS administers programs that provide rural areas with infrastructure and infrastructure improvements, including water and wastewater treatment, telecommunications services, and electric power. For electric power, RUS provides financing through loans and loan guarantees for the construction, operation, and improvement of electric transmission and generation facilities in rural areas. Power cooperatives in South Dakota have applied for RUS financing for the construction of power lines to deliver power to PS-15 through PS-21. The South Dakota power cooperatives include Grand Electric Cooperative (PS-15, 16, and 17), West Central Electric Cooperative (PS-18 and 19) and Rosebud Electric Cooperative (PS-20 and 21). RUS's action is to determine whether to provide Federal financing to these electric cooperatives, thus allowing them to construct and operate the transmission line facilities necessary to supply the Project's pump stations with power.[1]

[1] The power cooperatives could identify and secure alternate financing if RUS decides not to provide financing.

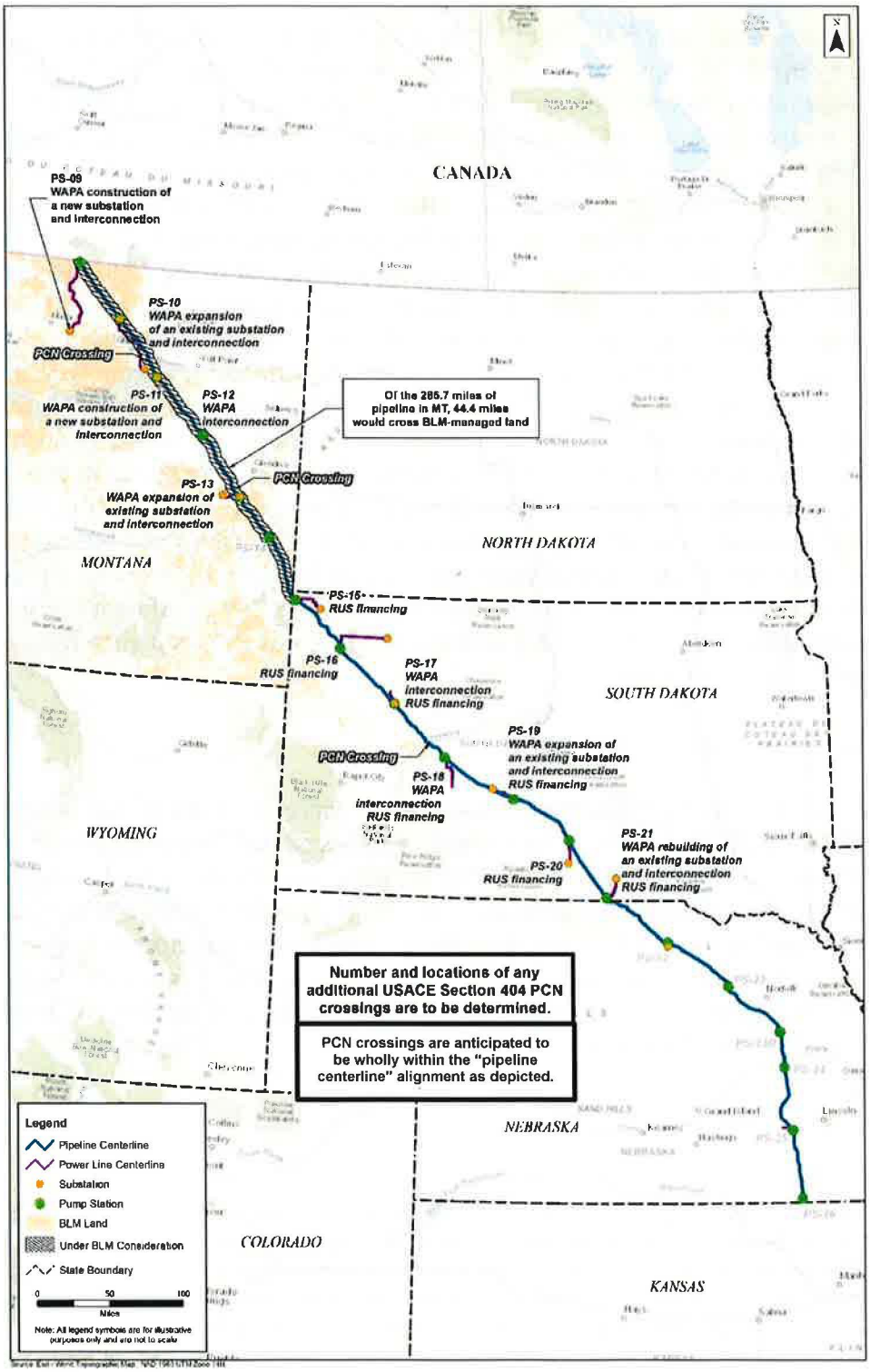

Figure 1. Location of Proposed Federal Decisions as presented in the BA (BLM 2019, p. 13)

USACE

The Project, as described in section 2.6 of the BA (BLM 2019, p. 15) would cross Federal lands administered by the BLM, as well as Federal land administered by the USACE for the Fort Peck Project. As required by 33 USC 408, the USACE must give permission for the BLM to include the Fort Peck Project lands in a ROW granted to Keystone the Project on Federal land administered by both agencies. The USACE may also consider, whether to issue general permit verifications or permit approvals under section 10 of the Rivers and Harbors Appropriation Act of 1899 (33 USC 403) for any pipeline or power line construction over, under, or through navigable waters listed under section 10, and/or under section 404 of the Clean Water Act (33 USC 1344) for Project activities involving dredging or filling in rivers, streams, or wetlands.[2] Based on pre-application meetings held with the applicant, USACE anticipates receiving pre-construction notifications (PCNs) along with a request for permit review from Keystone once section 7 ESA consultation is completed with Service. The USACE expects PCNs for pipeline crossings at the Missouri River, and the Yellowstone River, which are both section 10 rivers, as well as other rivers not subject to section 10 but within the general alignment of the Project. Additional PCNs may be submitted for USACE review along other portions of the Project. If any PCNs are submitted for activities in Nebraska, USACE's decisions on potential section 404 verifications would be the only Federal decisions made in the state of Nebraska for the Project. However, submittal of new PCNs within the current pipeline ROW should not impact the USACE's compliance with ESA section 7 or the analysis in this BO, as it encompasses all USACE-related permitting decisions.

Summary of Proposed Federal Activities

Collectively, the proposed Federal actions comprise the decisions of the BLM, WAPA, RUS, and the USACE as described above. The Federal agencies are not proposing to construct or manage the Project; however, under section 7 of the ESA, any effects on ESA-listed species resulting from the construction and operation of the Project could be considered consequences of the proposed Federal actions. Therefore, the effects of the Project on protected species are evaluated as part of the effects of the proposed Federal action. Consistent with the regulations at 50 C.F.R. §402.02, the action area encompasses all areas affected by the Project, as described in section 2.6 of the BA and Appendix C of the BA (BLM 2019, p. 16; Appendix C).

[2] USACE regulates the discharge of dredged or fill material into waters of the United States under section 404 of the Clean Water Act, and the construction of structures and work in navigable waters of the United States under section 10 Rivers and Harbors Act. Therefore, typically USACE does not have authority for the operations phase of a project. Furthermore, per 33 C.F.R., 2017 Issuance and Reissuance of Nationwide Permits, Final Rule, USACE does not directly regulate oil and gas pipelines, or other types of pipelines. For utility lines, including oil and gas pipelines, USACE's legal authority is limited to regulating discharges of dredged or fill material into waters of the United States and structures or work in navigable waters of the United States, under section 404 of the Clean Water Act and section 10 of the Rivers and Harbors Act of 1899, respectively. USACE does not have the authority to regulate the operation of oil and gas pipelines, and does not have the authority to address spills or leaks from oil and gas pipelines.

Action Area

The action area is defined as "…all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR 402.02). For the purposes of this BO, the Service determined that the action area is the pipeline ROW (temporary and permanent) and all areas encompassing the pipeline construction, operation, and maintenance activities, ancillary facilities, temporary workspaces, pipe stockpile sites, railroad sidings, contractor yards, construction camps, access roads, and other aboveground facilities, including pump stations and power lines.

The action area begins where the Project crosses the United States border from north to south near Morgan, Montana, and continues southeast to Steele City, Nebraska (Figure 2) (BLM 2019, pp. 17-20).

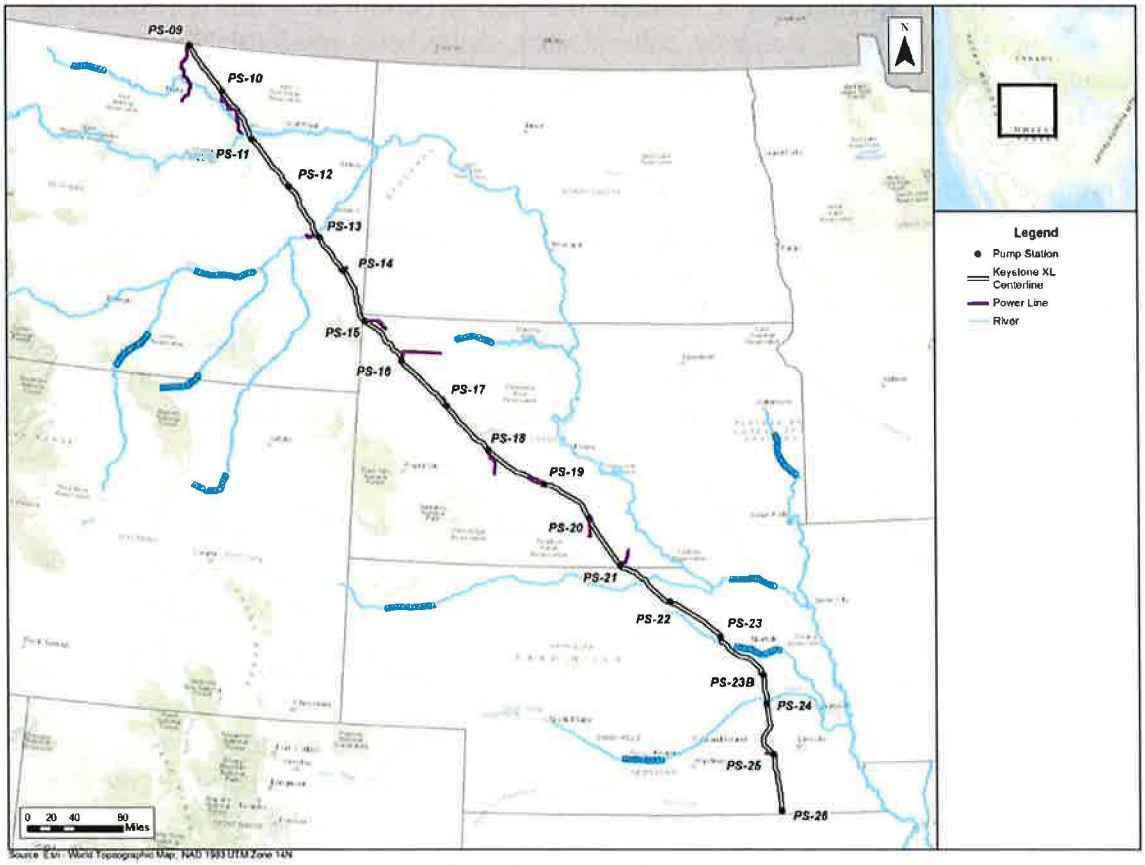

Figure 2- Proposed Project Overview (BLM 2019, p. 17)

Description of the Proposed Project

Keystone proposes to construct and operate a crude oil transmission system from an oil supply hub near Hardisty, Alberta, Canada, to destinations in the United States. In total, the Project would consist of approximately 882 miles of 36-inch diameter pipeline in the United States. The Project would have the capacity to deliver up to 830,000 barrels per day of crude oil.

As acknowledged in the 2014 Final SEIS, after completion of the analyses required under National Environmental Policy Act and under section 7 of the ESA, "Keystone will make minor adjustments to the proposed pipeline alignment during final design based on additional information obtained from field surveys or landowners. These minor route variations (microalignments) could be implemented to address specific landowner concerns, avoid certain features (such as structures, wells, or irrigation systems), minimize effects to environmental resources, or facilitate construction in such areas as steep terrain or waterbody crossings" (Department 2014, p. 2.1-2).

Proposed activities and a summary of Federal and non-federal lands where activities occur are summarized Tables 2.6-1 and 2.6-2 of the BA (BLM 2019, pp. 21-23). The installation of the proposed 36-inch diameter pipeline would occur within a 110-foot-wide construction ROW, consisting of a 60-foot temporary construction ROW surrounding a 50-foot permanent ROW. The ROW during construction will be reduced to 85 feet in certain areas due to restrictions regarding other features (e.g., wetlands, cultural sites, shelterbelts, residential areas, and commercial/industrial areas). Descriptions of additional temporary workspaces, construction camps, and access roads are included in Appendix C of the BA (BLM 2019).

The amount of land affected during construction would total approximately 13,090 acres, of which approximately 8,304 acres would be overlapped by permanent ROW and/or occupied by permanent facilities. After construction, the temporary ROW would be restored and returned to its previous land use. All disturbed acreage would be restored and returned to its previous aboveground land use after construction, except for the approximately 37 acres occupied by electrical substations and switching stations and the approximately 282 acres occupied by permanent access roads and aboveground facilities, including pump stations and valves, for the life of the Project.

Almost all of the land affected by the construction and operation of the Project would be privately owned. BLM oversees the management of the majority of the federally owned lands affected by the Project.

Keystone will use Environmental Inspectors on each construction spread. The Environmental Inspectors will review the Project activities daily for compliance with state, Federal and local regulatory requirements. The Environmental Inspectors will have the authority to stop specific tasks as approved by the Chief Inspector. They can also order corrective action in the event that construction activities violate the provisions of the Construction Mitigation and Reclamation Plan (BLM 2019, Appendix B), landowner requirements, or any applicable permit requirements. The compliance manager for Keystone would be the point person for communication with the USFWS as required. The monitors that would be used in the field would be reporting to the environmental inspectors, who in turn report to the compliance manager. If required, the monitors would discuss any required interpretation or issues with the USFWS and the compliance manager. More information is provided in the CONSTRUCTION MITIGATION AND RECLAMATION PLAN (BLM 2019, Appendix B) and the PROPOSED PROJECT DESCRIPTION (BLM 2019, Appendix C).

Electrical Transmission and Distribution Lines and Substations

Local, non-federal power providers (typically called utilities or cooperatives) will provide electrical service to the Project. In some instances, new and/or upgraded electrical transmission and distribution lines (power lines) and substations would be needed in order to deliver power. The local utility or cooperative will be responsible for constructing any such power lines or substations, as well as obtaining the necessary permits, approvals, or authorizations from Federal, state, and local governments. Further coordination between local power providers and applicable resource management agencies may be required to ensure the conservation of protected species and to obtain the necessary permits and approvals to construct and operate the power lines.

WAPA may need to construct new substation facilities or upgrade existing substation facilities to support the electrical service to for the Project. This BO evaluates the conservation measures that WAPA has committed to implement, as well as potential effects of WAPA Federal actions, including construction and upgrading substation facilities, on ABB. Table 2.6-3 in the BA provides a summary of the power line and substation information (BLM 2019, pp. 24-25). See Figure 1 for the location of these pump stations. Additional details are included in Appendix C of the BA (BLM 2019). Microalignments may change the lengths of pipeline and/or power line, areas of ROW, and the number of power line support structures, but would not likely result in a meaningful increase in these aspects of the Project.

Pipeline Incident Analysis and Emergency Response Plan

The likelihood of potential accidental or unexpected oil releases from the pipeline during operation was analyzed in the 2014 Final SEIS. This analysis has subsequently been updated using more recent information. A description of the updated pipeline incident analysis can be found in Appendix C of the BA (BLM 2019). However, the potential effects on ABB from potential spills are not reasonably certain to occur (50 C.F.R. §402.17) for reasons stated below (see Exposure to Potential Oil Spill and Emergency Repairs section of this BO).

A Project-specific Emergency Response Plan (ERP) will be prepared for the Project, which would be submitted to the Pipeline and Hazardous Materials Safety Administration (PHMSA) for approval prior to commencing system operations. A comprehensive ERP for the existing Keystone Pipeline Project has been reviewed and approved by PHMSA. The publicly available portion of the Keystone Oil Pipeline System ERP is included as BA Appendix D, Spill Prevention, Control and Countermeasure Plan and Emergency Response Plan (parts of the ERP and the Pipeline Spill Response Plan are considered confidential by PHMSA and the U.S. Department of Homeland Security). As described in section 4.13 of the 2014 Final SEIS, the existing Keystone Oil Pipeline Project documents would be used as templates for the plans for the Project. Project-specific information would be inserted into the plans as it becomes available. More information on emergency response procedures is described in section 12, Emergency Response Procedures, Appendix C of the BA (BLM 2019).

Conservation Measures for the American Burying Beetle

Keystone, the electrical power providers, or WAPA, where specified below, will apply the following conservation measures to the extent practicable and allowed by landowners to avoid, minimize, and mitigate effects on the ABB and potentially suitable habitat for the species.

The following conservation measures will be implemented for the Project:

- Construction areas with ABB habitat will be mowed[3] such that the vegetation is as low as possible without causing erosion (less than eight inches), in accordance with Nebraska Game and Parks Commission (NGPC) guidance (NGPC 2019a, entire). Mowing and raking away grass clippings allows the ground to dry out. Mowing will occur when the ABB is active, so depending on the ground disturbance timeframe, the period when these procedures will be implemented is from March 15 through October 31, based on NGPC guidance. For winter construction activities (October 31 to March 31) mowing would occur by October 15. Hand clearing or mechanical mowing will be used to mow uplands. Forested uplands will not be cleared ahead of mainline construction and wetlands and streams will also be avoided. This short vegetation height will be maintained for the duration of active construction during the ABB overall active period (until October 31) or until construction in the vicinity is completed, whichever is earlier. Mowing will be completed every few weeks, if necessary, to ensure vegetation is kept less than eight inches tall until grading commences. Once mowed, clippings will be removed. Possible methods include raking, windrowing (cutting rows of vegetation), or baling. If the grass has stopped growing, or grading commences, mowing can stop. All construction work vehicles, and personal vehicles will be staged in mowed areas. If it is not possible to maintain vegetation under eight inches in height, construction will avoid such areas until the vegetation can be mowed to less than eight inches in height. For power line construction in potentially suitable ABB habitat, the electric power providers will mow only in construction areas with soil disturbance (pole installation), as recommended by the Service and NGPC. Once mowing procedures have been initiated, weekly reports will be kept and submitted to the Service, NGPC, and South Dakota Game, Fish, and Parks (SDGFP). These reports will demonstrate that the conservation measures are being implemented and become part of the records. Weekly reports are only required during the ABB active period (April 1 to October 31) while construction on the Project is active. Photos documenting grass heights will be provided.
    - For the above mowing conservation measure, Keystone will implement in pipeline construction ROW, the electric power providers will implement in power line ROW,

[3] The purpose of mowing construction areas is to ensure that ABBs are not attracted to the active construction site. NGPC recommends mowing construction areas 2 weeks prior to the commencement of ground disturbing activities between these dates. Willemssens (2015, entire) conducted numerous experimental tests and found burying beetles were significantly less likely to bury in construction zones and concluded that mowing as a pre-work conservation measure should reduce the number of ABBs present.

and WAPA will implement for the substation that would serve PS-21 in South Dakota.

- The work areas in ABB habitat will be prepared by removing any and all carcasses[4] prior to construction, in accordance with NGPC guidance (NGPC 2019a, entire). Carcasses as small as songbirds, snakes, and rodents are ideal food for the ABB; therefore, this removal activity will be thorough. Carcass removal will occur between March 15 and October 31 or until construction is completed, whichever is earlier. Personnel will survey the ROW daily to remove carrion. Carcass removal can be done at any time throughout the day; however, the preferred timing is in the late afternoon, since the ABB is active at night. This will ensure that ABBs are not drawn to the area by roadkill caused by daytime traffic. Disposal of carcasses will be at least 0.5 miles away from the work site. For power line construction in potentially suitable ABB habitat, electric power providers will remove carrion only in construction areas with soil disturbance (pole installation), as recommended by the Service and NGPC. Carrion removal reports will be submitted as with the mowing reports. Once carrion removal procedures have been initiated, weekly reports will be kept and submitted to the Service, NGPC, and SDGFP. These reports demonstrate that the conservation measures are being implemented and become part of the records. Weekly reports are only required during the ABB active period (April 1 to October 31) while construction on the Project is active. If the number and species of carrion can be easily identified (for example, deer carcass, bull snake, mouse, etc.), this information will be included in the report. Photo documentation of carrion removed will be provided.
    - For the above carrion removal conservation measure, Keystone will implement in pipeline construction ROW, the electric power providers will implement in power line ROW, and WAPA will implement for the substation that would serve PS-21 in South Dakota.
- During the construction phase, most of Keystone's construction activity will take place in daylight hours. Construction activities taking place at night would require artificial lighting and could thereby have an effect on ABB by disruption of normal behavior patterns. Construction at night and the use of lights will be limited to specific situations requiring this activity such as critical tie-ins (connection of a pipeline to a facility, other pipeline systems, or different sections of a pipeline), Horizontal Directional Drilling (HDD) sites, and during certain weather conditions. Where such activities require lighting, the lights will be down shielded and utilize warm amber-colored lights with a color temperature of 3000 K or less and intensity no greater than 70,000 lumens. Lighting required for contractor yards and pump stations will also be down shielded (to prevent unnecessary upward illumination), except where required for safety and security, and will utilize sodium vapor or LED lighting meeting the above specifications.

[4] Removing carrion (essential for ABB feeding and reproduction) will make the work area less attractive to the ABB. By removing carrion in areas where construction would occur, this ensures that ABB would not be feeding or burying carcasses in an area where they could encounter construction equipment.

- Keystone will implement an education program for construction personnel engaged in the Project. This will include a presentation focused on identifying the ABB, explaining its life history, its current range, and its habitat requirements. Pipeline construction personnel will be instructed to report any sightings of ABB or brood chambers if encountered. Education cards will be provided to all construction personnel. Signs will be placed at construction entrances identifying the area as potential ABB habitat.
- Immediately following construction, Keystone will rip (mechanically break up) soils in disturbed areas on the temporary pipeline ROW to a depth of 24 inches to relieve soil compaction existing at the site from the use of heavy equipment. This effort will improve or enhance ABB habitat by making soils easier for ABBs to bury in. Keystone's Construction, Mitigation, and Reclamation Plan (CMRP) in Appendix B of BLM (2019) provides further details with regard to relief of soil compaction within ROWs following construction.
- Keystone will implement erosion control techniques such as silt fencing, hay bales, water bars, and other efforts to prevent washing away of topsoil, formation of gullies, or other erosion that could negatively affect ABB habitat through the action of surface water. Keystone's CMRP (BLM 2019, Appendix B) provides further details with regard to erosion control following construction.
- Immediately following pipeline construction, Keystone will temporarily stabilize disturbed areas by broadcasting cool season species such as annual rye grass or wheat seed. Where necessary, clean, weed-free wheat straw will be used as mulch to protect seed and increase soil moisture. These grasses are annual species that senesce when temperatures warm during summer; they will not become permanently established. During the spring, a mixture of native warm season grasses will be planted within the ROW. This will include species such as little bluestem, big bluestem, Indiangrass, and switchgrass. Natural recruitment of other native grasses and forbs will also occur. It should be noted that some portions of the ROW, in response to landowner requirements, will be revegetated using non-native species such as smooth brome. This type of re-vegetation will likely be restricted to areas that are currently dominated by improved grass pastures and will therefore not lead to a reduction of habitat dominated by native species. In the limited circumstance where landowners request re-vegetation of previously native vegetation to non-native vegetation, Keystone will consider this as a permanent effect on habitat and will provide appropriate mitigation for those areas, unless those areas are subject to other conditions from USACE. Keystone's CMRP (BLM 2019, Appendix B) provides further details with regard to restoration of pipeline ROWs following construction.
- Keystone is committed to habitat restoration following construction. The ABB monitoring program will provide assurances that the acres disturbed would be restored appropriately. Failure is unlikely due to Keystone's commitment to re-seed in subsequent years if unsuccessful after the first growing season. Criteria for successful reclamation are: 1) reclamation will be measured four years after the commencement of construction; 2) for reclamation to be deemed successful, native grasslands restored on the ROW must be

comparable to those on adjacent undisturbed lands; 3) 70 percent of the dominant species on the ROW must be the same as those that occur on adjacent off-ROW lands.

- The Nebraska Public Power District (NPPD) and Rosebud Electric Cooperative will schedule power line and switching station construction activities during the ABB dormant or inactive time[5] (October 31 to March 31). The power providers will coordinate with Service and NGPC to determine appropriate measures to minimize potential effects if such scheduling cannot be accomplished due to unexpected circumstances, including weather delays.

The Service previously recommended project proponents "capture and relocate" ABB near a project footprint to remove ABBs from the project area prior to project implementation and associated impacts. However, this conservation measure is no longer considered a beneficial practice for reducing harm to ABB. Hoback and Conley (2014, p. 56) found that capturing and relocating burying beetles near the project site may not remove all beetles prior to impacts, as other beetles may recolonize the project site following the capture and relocation effort. The risks associated with attracting additional ABB to a project site, as well as handling them during the trapping and relocating (can result in additional adverse effects), may outweigh the benefits (Hoback and Conley 2014, p. 61).

Mitigation Measures Proposed for the American Burying Beetle

Keystone is committing to mitigate the impacts to ABB as part of the proposed action. However, because the take of ABB will occur on private lands, Keystone has submitted a draft HCP in support of an application for an incidental take permit to minimize and mitigate the impacts to ABB to the maximum extent practicable (a permit issuance criteria). Goal 2 of Keystone's draft HCP (Keystone 2019, p.110) is to provide permanent compensatory mitigation of ABB impacts not avoided by other conservation measures. To achieve this goal, Keystone aims to protect, in perpetuity, an amount of occupied ABB habitat based on the mitigation ratios described in the draft HCP (Keystone 2019, p. 114) via an approved conservation bank; or, if conservation banks are not available, provide funds to third-party for: (1) purchase of land to provide habitat for ABBs; and (2) restoration and long-term management of the property. Keystone agrees to mitigate impacts of the taking of ABB by acquiring and protecting suitable habitat lands in perpetuity prior to start of construction. Keystone is in the process of retaining the Conservation Fund to work with the Service and Keystone to identify lands for either a conservation easement or purchase.

ABBs are nocturnal (Service 1991, p 11) and have a limited active season (Service 2019a, p. 10), making them difficult to detect (see Status and Distribution section below in the BO). Therefore, rather than use ABB survey data to determine ABB presence, Keystone selected to use a conservative approach and assumes that ABBs may occupy all suitable habitat within the documented ABB range, for all habitats rated marginal to prime (only poor habitat rating

[5] Construction during the dormant or inactive season minimizes impacts to ABB due to reduced frozen soils compacting less and ABB being underground, further from the soil surface. This reduces the potential for crushing and disturbing individuals.

excluded). Keystone will provide mitigation in perpetuity for temporary and permanent impacts to habitat. Mitigation for temporary impacts offset the impacts of lost habitat during the time period habitat restoration is occurring at the impact site. Additional mitigation is also provided to cover the unlikely event of unsuccessful restoration as described in section 9.3.3 (Keystone 2019, p. 114). Based on the mitigation ratios presented in the HCP (Keystone 2019, p. 114), the calculated total of mitigation acres is 1,034.03 acres (Keystone 2019, p. 116). This measure is intended to offset the impacts of take from the Project, including temporary and permanent loss, degradations, and fragmentation of ABB habitat. Table 25 in the draft HCP (Keystone 2019, p. 115) details the number of impacted and mitigation acres for permanent and temporary impacts and by state. Table 26 includes mitigation for power line impacts (Keystone 2019, p. 116).

STATUS OF THE SPECIES AND CRITICAL HABITAT RANGEWIDE

Status and Distribution

The ABB was listed as endangered on July 13, 1989 (54 FR 29652; Service 1989, entire) based on a drastic decline and extirpation over nearly its entire range. The Service prepared a recovery plan in 1991 (Service 1991, entire) and a Species Status Assessment Report in 2019 (SSA report; Service 2019a, entire). On May 3, 2019, the Service published a proposed rule and 12-month petition finding to reclassify the ABB from endangered to threatened with a 4(d) rule (84 FR 19013). The Service has not designated critical habitat for this species. During the 20th century, the ABB disappeared from over 90 percent of its historical range (Lomolino et al. 1995, p. 606) which covered most of temperate eastern North America. The species was formerly distributed throughout 35 states and three Canadian provinces (Ratcliffe 1996, p. 60) but is believed to be extirpated from all but nine states in the U.S. and likely from Canada. The ABB is now known to occur in portions of Arkansas, Kansas, Oklahoma, Nebraska, South Dakota, Texas (not documented since 2008), on Block Island off the coast of Rhode Island; and reintroduced populations on Nantucket Island off the coast of Massachusetts, southwest Missouri, and Ohio. A potential report of an ABB in Michigan in 2017 is being investigated to determine if the area supports ABBs (Service 2019a, p. 7). Figure 3 shows the current range of the ABB. The Species Status Assessment Report defined populations as analysis areas based on broad geographic and ecological patterns to use in the evaluation of the species (Service 2019a, pp. 21–23).

Due to the severity of the decline and uncertainty regarding the causes, the recovery actions in the 1991 recovery plan focused on preventing the extinction of the species rather than developing actions and criteria for recovery. Recovery criteria were developed for downlisting, not for recovery. The objectives of the recovery program are: (1) Reduce the immediacy of the threat of extinction to the ABB and (2) improve its status so that it can be reclassified from endangered to threatened (Service 1991, p. 31). The Service's 2008 five year status review found that the ABB should remain as endangered because threats to the species had not been abated sufficiently to show that the ABB is no longer in danger of extinction (Service 2008, p. 35). The Service's 2019 proposed rule indicated that the threats to the species have been reduced to the point that it no longer meets the definition of an endangered species under the Act, but is likely to become endangered within the foreseeable future (84 FR 19013).

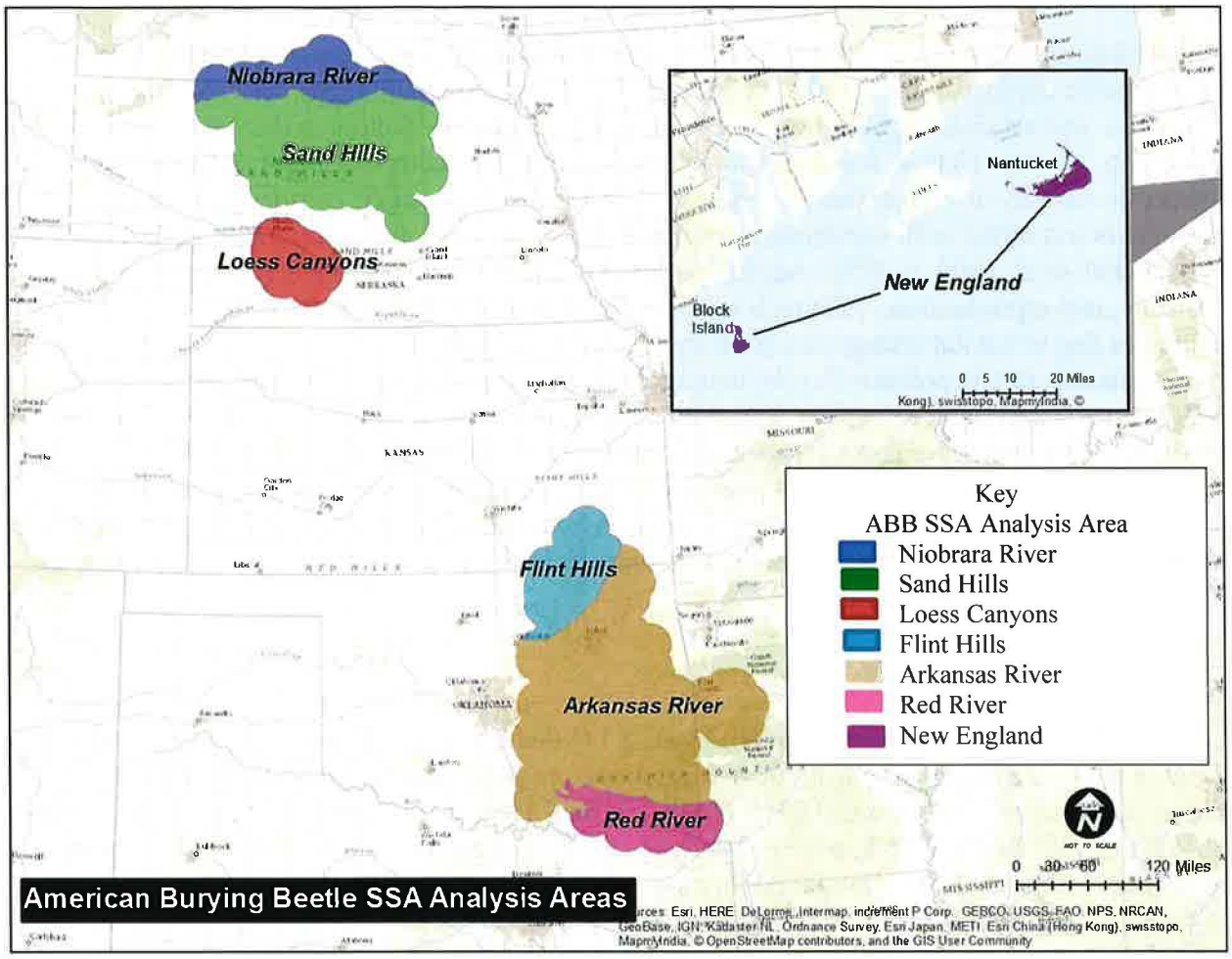

Figure 3. American Burying Beetle Species Status Assessment Analysis areas (Service 2019a, p. ES-2).

The populations in Nebraska/South Dakota, Kansas/Oklahoma, Oklahoma/Arkansas, and central Arkansas were all estimated to be greater than 1,000 individuals in 2005 with a total estimated rangewide population of approximately 50,000 individuals (Amaral et al. 2005, p. 37). However, populations of the ABB fluctuate annually due to the weather, carrion availability, and other factors; thus, these population estimates have little utility unless managers conduct consistent surveys over the course of several years so that we can evaluate trends (Service 2008, p. 14). Such rangewide surveys are not currently conducted for this species and we have limited information by which to measure ABB population abundance (Service 2019a, p. 71). Jurzenski et al. (2011, pp. 137-138) also noted that it is necessary to carefully interpret mark and recapture data due to the assumptions that emigration and immigration do not occur and that all individuals are available for recapture during the sampling timeframe. For the above reasons, the Service used the ratio of positive to negative ABB surveys to determine ABB relative abundance in the population analysis areas, rather than population estimates (Service 2019a, p. 71).

Threats

Habitat loss and alteration, availability of carrion, competition with meso-carnivores, inter and intra-specific competition, loss of genetic diversity, disease and pathogens, climate change, pesticides, and artificial lighting were identified as potential risk factors to the ABB (Service 2019a, pp. 25-49). Habitat fragmentation changes the species composition in ABB habitat, lowers the density of indigenous prey species, and results in increased competition for prey (mammals and birds) with vertebrate scavengers (Ratcliffe 1996, p 64; Amaral et al. 1997, p. 124; Bedick et al. 1999, p. 179). Adults and larvae depend on dead animals (carrion) for food, moisture, and reproduction. Although much of the evidence suggesting the reduction of carrion resources due to habitat change as a primary mechanism driving the decline of the ABB is circumstantial, this hypothesis fits the temporal and geographical pattern of the disappearance of ABBs; and, is sufficient to explain why ABBs declined while related species did not (Service 2019a, p. 174). Some remaining populations have risks associated with areas of urban development, but most current ABB populations are in rural areas and have potential risks associated with soil disturbance activities. Risks associated with the effects of changing climate, including increasing temperatures, are now a significant threat for some analysis areas (Service 2019a, p. 50).

Reproduction/Active Periods

The ABB is a nocturnal species (Service 1991, p 11) that lives for only one year (Bedick et al. 1999, p. 178). ABBs emerge from their winter inactive period when ambient nighttime air temperatures consistently exceed 59° F (15 °C) (Kozol 1988, p. 11; Kozol 1990, p. 4; Bedick et al.1999, p. 179; Service 2008, p. 13). Typically, ABBs are active from May through September in southern portions of their range, but in more northern latitudes of their range, the active period is June through August (Service 2019a, p. 10). ABBs are active at night during their active period; they are most active from two to four hours after sunset (Service 2019a, p. 10). During the daytime, ABBs are believed to bury under soil or vegétation litter (Jurzenski 2012, p. 76.)

Reproduction occurs in the spring to early summer. ABB's require vertebrate carcasses of sufficient size (80-200g) for breeding (Holloway and Schnell 1997, p. 145). The female lays eggs in the soil adjacent to the carcass where they incubate for about 6 days before becoming larvae (Service 2019a, p.18). New adult ABBs or offspring (called tenerals), usually emerge in summer, over-winter (hibernate) as adults, and comprise the breeding population the following summer (Kozol 1988, p 2; Amaral et al. 2005, pp. 30, 35).

Feeding

Individual ABBs must fly to find food, a mate, and an appropriate sized carcass on or near suitable soils for burial (Service 2019a, p. 11). When not involved with brood rearing, adults' food sources can include selection of an array of available carrion species and sizes, as well as feeding through capturing and consuming live insects (Service 1991, p. 11). In a lab, the ABB was attracted to both avian and mammalian carcasses (Kozol et al. 1988, p. 170), reptiles, amphibians, and fish (Bedick et al. 1999, p. 174).

Habitat

The ABB is considered a generalist in terms of the vegetation types where it is found, as it has been successfully live-trapped in a wide range of habitats, including wet meadows, partially forested loess canyons, oak-hickory forests, shrub land and grasslands, lightly grazed pasture, riparian zones, coniferous forest, and deciduous forests with open understory (Walker 1957, entire; Service 1991, pp.14-17; Service 2008, pp.8-11; Creighton et al. 1993, entire; Lomolino et al. 1995, entire; Lomolino & Creighton 1996, entire; Jurzenski 2012, pp.47-72; Willemssens 2015, pp. 5–6). Individuals do not appear to be limited by vegetation types as long as food, shelter, and moisture are available; ABBs have been recorded moving between and among these habitat types (Holloway and Schnell 1997, entire; Creighton and Schnell 1998, entire). Trapping success was higher at sites where small mammals were abundant (Holloway and Schnell 1997, p. 151). The Service believes that preserving large areas of suitable habitat is a conservation strategy that contributes to maintaining viable ABB populations (Service 2014, entire).

A more detailed life history account of the ABB is on our website: *https://www.fws.gov/southwest/es/oklahoma/Documents/ABB/Listing/ABBSSA_Final_V1.0_Feb2019.pdf*

ENVIRONMENTAL BASELINE FOR THE ACTION AREA

"Environmental baseline refers to the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all Federal, state, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of state or private actions which are contemporaneous with the consultation in process. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are part of the environmental baseline" (50 C.F.R. §402.02). The environmental baseline below describes the condition of the ABB and its habitat in the action area to provide the context for analyzing the effects of the action now under consultation.

Status of the Species within the Action Area

The ABB occurs within South Dakota and Nebraska and has been described as occurring in two, or three distinct populations, within different literature sources. In Amaral (2005, p. 27), these populations are described as only two distinct populations; a southern population centered in Lincoln and Dawson Counties (referred to as the "Loess Hills"), and a northern population in north central part of the state centered in Rock, Loup, Blaine, and Brown Counties and extending north into South Dakota. The five-year status review also discusses these two discrete areas but uses "Sand Hills" to describe the geographically larger ABB population in north central Nebraska (Service 2008, p. 25). The SSA Report identifies three analysis areas in Nebraska: Loess Canyons, Sand Hills, and Niobrara River (Service 2019a, pp. 22-23). The Loess Canyons

is the same as the Loess Hills population described in the earlier reports. However, the larger northern population described in those earlier reports was separated into two areas with the Niobrara River serving as the boundary between the two: "Sand Hills" analysis area (Sandhills analysis area) and "Niobrara River" analysis area. Figure 4 and 5 below depict the estimated distribution of the ABB near the Project.

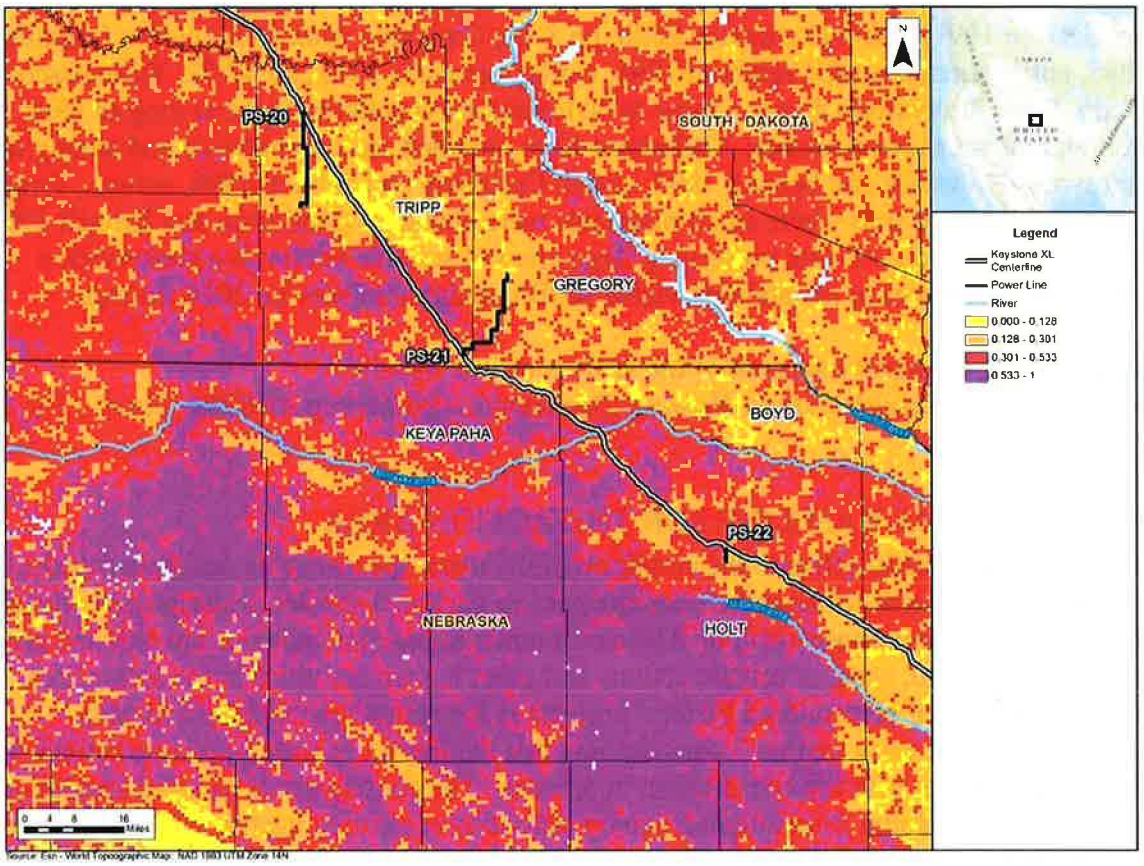

Figure 4. Predicted Distribution of American Burying Beetle near the Project, as Modeled by Leasure and Hoback (2017, entire) and presented in the BA (BLM 2019, p. 95)

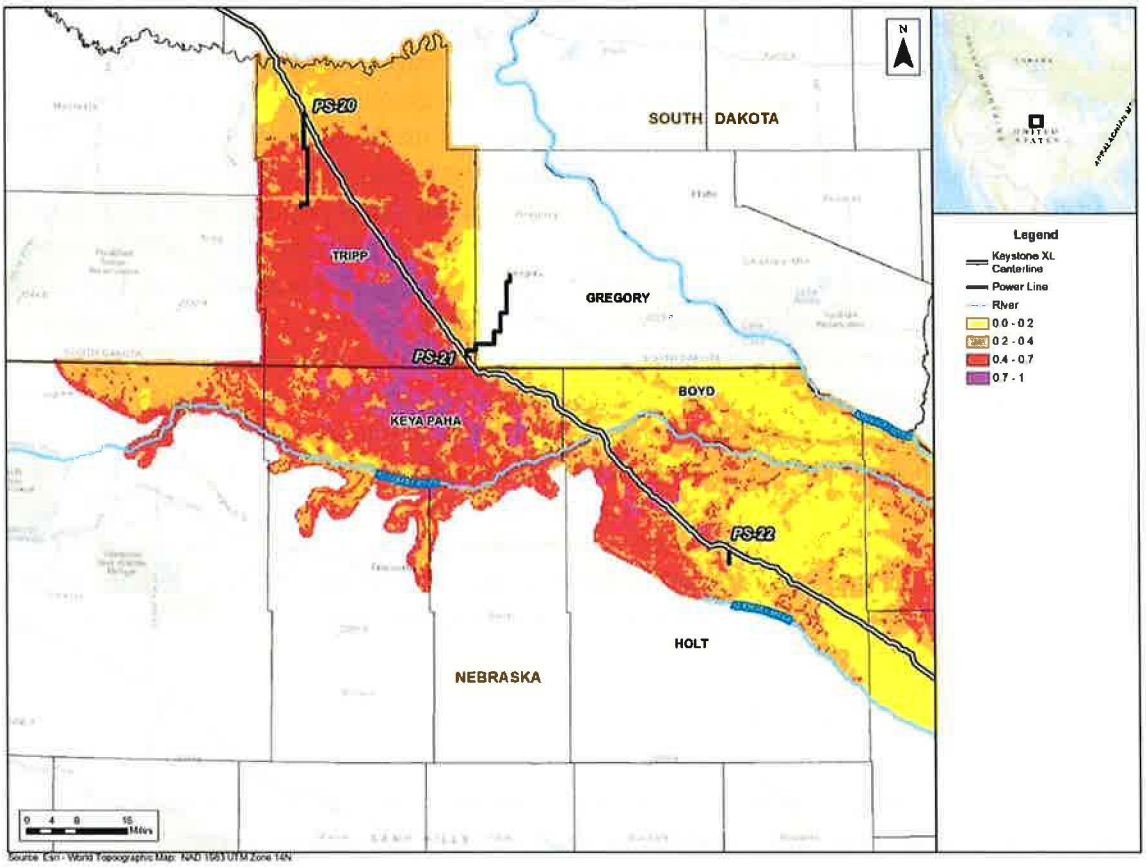

Figure 5. Predicted Distribution of American Burying Beetle near the Project, as Modeled by Jenkins et al. (2018) and Presented in the BA (BLM 2019, p. 96)

The action area for the Project falls within the Sandhills and Niobrara analysis areas described in the SSA Report (Service 2019a, entire). Approximately 8,633,685 acres of potential ABB habitat occurs in the Sandhills analysis area, including favorable, conditional, and marginal land cover types (Service 2019a, p. 63). The Sandhills analysis area has the highest ratio of positive to negative surveys of all ABB analysis areas. Future land use changes are not expected to impact relative abundance of ABBs in the Sandhills analysis area (Service 2019a, p. 119). Panella (2013, p. 2) indicates that since 2005 the trend of the ABB population in Nebraska is "fluctuating with drought." Approximately 2,961,469 acres of potential ABB habitat occurs in the Niobrara analysis area (northcentral Nebraska and southcentral South Dakota), including favorable, conditional, and marginal land cover types (Service 2019a, p. 65). The Niobrara analysis area has the highest ratio and amount of total protected lands of all ABB analysis areas (Service 2019a, p. 71) and moderate ratios of positive to negative surveys (Service 2019a, p. 121). Future land use changes may have minor local impacts but are not expected to impact relative abundance of ABBs in the Niobrara analysis area (Service 2019a, p. 121). Amaral (2005, p. 75) used survey results to estimate a population of 10,000 ABBs within 1,000 square miles of potentially suitable habitat in what is considered here as the Sandhills and Niobrara analysis areas (north central Nebraska and extending into South Dakota). Beetle populations in the Niobrara analysis area have demonstrated fluctuations, but with good recoveries over the last decade (Service 2019a, p. 120).

South Dakota

The ABB is found in South Dakota in Tripp, Todd, Bennett, and Gregory counties in South Dakota; the Project does not enter Todd or Bennett counties. Beetles have been collected in the 1990s from Todd, Tripp, and Gregory counties (Backlund and Marrone 1997, p. 55). More recent data are only available from Tripp and Gregory counties. Surveys in 2005 revealed that ABBs are concentrated in Tripp County, where the population is estimated to be approximately 1,000 individuals in an area of approximately 54,363 acres (Backlund et al. 2008, p. 14). Modeling by Jenkins et al. (2018, p. 2) suggested that the ABB is most likely to occur in relatively undisturbed sites in the loess prairie ecoregion in southern Tripp County. Jenkins et al. (2018, p. 2) surveyed for this species in 2014, 2016, and 2018 in an attempt to define the northern and western limits of its current occupied range. The results of the surveys and subsequent modeling showed that the population in South Dakota continued to occupy central and southern Tripp County. To the east of Tripp County, expanding agriculture has rendered the region less suitable for the ABB. However, in 2019, surveys were conducted unrelated to the project in southwestern Gregory County. ABBs were captured at two sites more than 2 miles from the Project, but the other six valid trap sites did not capture ABB's; the data indicate that the population density in Gregory County may be less than in Tripp County (Hoback 2019, entire). Intensive sampling in and near a portion of the action area was conducted in 2019 in Tripp County. Sampling in 2019 occurred in June (BLM, Appendix W) and August (BLM, Appendix X) and indicated that the ABB continue to occur in relatively high densities.

The best habitat for the ABBs in South Dakota is similar to that for the northern Nebraska population and consists of wet meadows in sandy soils with scattered cottonwoods trees. The

habitat quality ratings from 2013 have been re-analyzed in 2018, or, for some, 2019, to reflect current conditions. A summary of the current habitat ratings is shown on page 102 of the BA and a description of the habitat rating criteria are found on page 100 (BLM 2019). The re-analysis revealed a substantial decrease in suitable habitat in the proposed pipeline corridor in South Dakota, mostly resulting from increased development of agriculture (e.g., center-pivot corn fields). Although in 2013, 25 miles of pipeline ROW were prime habitat, only four miles of pipeline ROW remained prime habitat in 2018/2019. New agricultural developments near the ROW have reduced the habitat ratings to fair or marginal. Neither the route in South Dakota nor the rating scale has changed.

Suitability ratings of ABB habitat crossed by the Project in South Dakota are provided in Table 3.2-9 and Figure 3.2-9 on p. 100, and p. 97 of the BA, respectively (BLM 2019). The Project pipeline in South Dakota would cross approximately four miles of prime habitat, 12 miles of good habitat, 10 miles of fair habitat, and five miles of marginal habitat. Beetles are unlikely to occur in marginal and considered absent in poor habitat.

Two proposed electric power lines to pump stations in South Dakota are within range of the ABB and connect to PS-20 and PS-21. The power line to PS-20 would lie in the northwest corner of Tripp County, mostly outside of the current range of this species. While recent surveys not associated with the Project (Jenkins et al. 2018, p. 2) captured ABBs in central Tripp County south of the town of Winner, no traps were set in the northwestern part of the county. Results of only four trap sites to the north and west of Winner have been reported, none of which captured ABBs (Backlund et al. 2008, p. 12). Therefore, the power line to PS-20 is assumed to overlap the occupied range of this species only to the south of U.S. Route 18. This power line would be approximately 20.5 miles long, but only approximately 2.7 miles would lie within the range of the species, within which the approximately 16.5 acres of ROW were rated as marginal habitat (BLM 2019, Appendix W, American Burying Beetle Sampling Report June 2019).

The ROW for the power line to PS-21 would overlap approximately 56 acres of prime, 47 acres of good, 17 acres of fair, and five acres of marginal habitat (BLM 2019, pp. 100-101). No portion of the line overlaps unsuitable ("poor") habitat or extends beyond an 18.6-mile buffer around all known capture locations since 2001 (USFWS 2019a); however, the northern portion of the line, as well as the proposed rebuild of WAPA's Gregory substation, would lie outside of the likely occupied range of this species based on habitat modeling (Figure 4 and 5, above) (SDNHP 2019; Leasure and Hoback 2017, entire; Jenkins et al. 2018, entire). WAPA's substation rebuild would occur within approximately 6 acres of marginal habitat, but outside the likely occupied range of the species.

Nebraska

In Nebraska, ABB's are known to occur in Blaine, Boone, Boyd, Brown, Cherry, Custer, Dawson, Frontier, Gasper, Holt, Keya Paha, Lincoln, Loup, Rock, Thomas, Valley, and Wheeler counties, and may occur elsewhere in Nebraska (Figure 3). The Nebraska National Heritage Program database (NNHP 2019) reports documented occurrences in Boyd, Holt, and Keya Paha counties along the Project route and historic records of ABB in Antelope County, which the

Project also passes through. Most of the ABBs in Nebraska are concentrated in the Sand Hills ecoregion, which the Project avoids. The Sandhills SSA analysis area (Service 2019a, entire) is a broader species population area description and is different than the Sandhills geographic ecoregion which is associated with a specific landscape type, though they do overlap. In addition, recent sampling has failed to detect this species anywhere along the MAR or in Antelope County. Therefore, the Project overlaps the range of this species in Nebraska only within Keya Paha, Boyd, and Holt counties (Figure 4 and 5 above). Additional information on ABB sampling results conducted in 2012 and 2018, and 2019 in Nebraska can be found in the BA (BLM 2019, pp. 101-109). Recent sampling in 2018 and 2019 along the Project route did not detect ABB's in the southeastern portion of Holt County or Antelope County (BLM 2019, pp. 105-106). The ABB continues to occur at low densities along the proposed pipeline ROW in the remaining portions of Holt, Boyd, and Keya Paha Counties (BLM 2019, figure 3.2-12 and 3.2-13, pp. 107-108), with densities in Holt County remaining the highest within the ROW in Nebraska. While the Project route in these counties is within the Sandhills and Niobrara SSA analysis areas, it is outside the Sandhills ecoregion.

Suitability ratings of ABB habitat crossed by the Project in Nebraska are provided in Table 3.2-11 and Figure 3.2-9 on p. 109, and p. 97 of the BA, respectively (BLM 2019). The proposed pipeline route in Nebraska would affect about 26 miles of prime, 13 miles of good, one mile of fair, and 5 miles of marginal habitat. In total, about 46 miles of habitat occur along the proposed pipeline ROW in Nebraska. Unlike in South Dakota, expansion of intensive agriculture near the proposed pipeline has been much slower in Nebraska, because much of the land suitable for such uses had already been under intensive cultivation by 2012; therefore, habitat reevaluation was not necessary except in areas not previously rated (BLM 2019, Appendix W).

Of the necessary new electrical power lines and substation in Nebraska, only the one serving PS-22 would occur within the current occupied range of the ABB. Trapping efforts in 2012, 2018, and 2019 confirmed the presence of the ABB at the trap sites closest to PS-22. The power line that would serve PS-22 would cross approximately one mile of marginal habitat and 1.5 miles rated poor (Table 3.2-12, BLM 2019, p. 109). Although this ROW would likely be 100 feet wide legally, an existing public road and associated road ROW would lie within the power line ROW. The proposed switching station, which would be constructed, owned, and operated by the local power providers, is assumed to occupy approximately 3.5 acres, and would be situated in marginal habitat. The next closest pump station, PS-23, and its associated power line in Antelope County would be located in an area heavily developed for agriculture and outside of the occupied range of the ABB (Leasure and Hoback 2017, entire; Jenkins et al. 2018, entire).

Factors Affecting Species Environment within the Action Area

Eastern red cedar encroachment, drought, land development, light pollution, and scavengers have been identified as threats to the ABB in Nebraska (Panella 2013, p. 2). Beetles are negatively associated with, and likely decline in response to habitat loss and fragmentation and increases in row crop agriculture and cultivated croplands (Bishop et al. 2002, p. 468; Leasure and Hoback 2017, entire). Agricultural expansion in South Dakota (BLM 2019, p. 99), and previous intensive agricultural conversion and existing cultivation in Nebraska (BLM 2019, p. 105), have

resulted in losses of native prairie rangeland where ABBs occur. Most of the potential conversion of ABB habitat to cropland requires irrigation in Nebraska and South Dakota. Increased irrigation or other uses of ground water are a risk if they exceed recharge rates and lower the water table. This could reduce habitat suitability by declining aquifer levels and decreasing soil moisture near the surface (Service 2019a, p. 64). Additionally, developed and converted land leads to declines in grassland nesting birds and rodents, which probably historically provided a large portion of the carrion available to the ABB. Species in this land type (developed agriculture) are often replaced by scavenging mammals and birds that compete with burying ABBs for carrion. Fire suppression in prairie habitats in Nebraska allows the encroachment of woody plant species, particularly the eastern red cedar, which is thought to degrade habitat for burying ABBs by limiting their ability to forage for carrion (Walker and Hoback 2007, p. 297). Urban expansion remains a risk and wind energy development has increased in recent years and may become a larger risk in the future (Service 2019a, p. 64). Other potential threats listed in the SSA (Service 2019a, p. 25) include inter and intra-specific competition, loss of genetic diversity, in isolated populations, disease/pathogens, DDT, and invasive species. Climate Change is also discussed and is described in greater detail below.

Climate Change

Climate has always limited the ABB range to some degree. Populations at the northern edge of the historic range were limited by cool night time temperatures and shorter growing seasons and could potentially expand north as climates warm. However, there are no current populations near the northern edges of the historic range and habitat limitations, rather than climate may prevent existing populations from moving north (Service 2019a, p. 44). Within the Great Plains, including Nebraska and South Dakota, the number of days with the hottest temperatures and the number of nights with the warmest temperatures are projected to increase dramatically for both lower emissions and higher emissions scenario (Shafer et al., 2014, pp. 442–445). Future precipitation is much more challenging to model and therefore projections of it have more uncertainty as compared to temperature (Service 2019a, p. 39).

Climate change could affect habitat suitability and potentially reduce or expand ABB use of portions of Nebraska and South Dakota. Increasing temperatures and dryer conditions potentially associated with climate change could cause reductions in the species' reproduction and numbers. Similarly, milder winters could disrupt hibernation cycles if freezing temperatures don't occur until later in the year or if temperatures consistently reach 55°F to 60°F earlier in the year. Portions of the Sandhills and Niobrara populations are near the northern and western edge of the known ABB range and changes in temperature and moisture could affect suitable habitat in future years (Service 2019a, p. 64). Beetles in the areas may have a longer time period for potential reproduction than ABBs in the southern portion of their range. Beetles in Nebraska and South Dakota could emerge from over wintering by late May or June and be ready to reproduce at that time. From June to August, ABBs could have suitable conditions for reproduction in northern areas and that timeframe could be nearly twice as long as the southern portion of the ABB range (Service 2019a, pp. 47–48).

Climate change also has the potential to affect habitat availability through changes in land uses (Service 2019a, p. 48). The National Climate Assessment was conducted by region with Nebraska being a part of the Great Plains Region, and within that report, Shafer et al. (2014, p. 446) noted that rising temperatures in the Great Plains may increase human competition for water. Increased temperatures in the Great Plains states could lead to earlier spring snowmelt, decreased snowmelt season duration, and decreased peak snowmelt flows (Bathke et al. 2014, p. 26). Increased temperatures would also result in decreased soil moisture due to increased evapotranspiration from vegetation that breaks dormancy earlier. Drought frequency and severity would increase in Nebraska due to increased temperatures and expected seasonal variability in precipitation (Bathke et al. 2014, p. 33). Increased temperatures could increase water demands and usage for irrigation and potentially lower groundwater levels in aquifers (Service 2019a, p. 48). Also, increased temperatures and longer droughts may increase the percentage of pastures that are heavily grazed or increase the demand for hay and encourage more cuttings (Service 2019a, p. 48).

Habitat conditions, population abundance, and distribution are all likely to be affected by climate change. The Service analyzed in its recent SSA impacts of climate change to populations in the northern plains, which includes the Sandhills and the Niobrara populations in Nebraska and South Dakota (Service 2019a, entire). Under moderate emissions levels, populations in all northern plains areas should be maintained through 2099, but some reductions in abundance and distribution are possible as temperatures approach the temperature threshold levels. Under high emissions level, potential extirpation is likely for all of the northern plains areas by 2070–2099 under the high emissions level (Service 2019a, p. 162).

EFFECTS OF THE ACTION

Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (50 C.F.R. §402.17)

Effects of the action are a reasonable prediction of the likely response by individuals of a species to and the resulting biological effects from the environmental changes brought about by implementation of the chosen proposed action. The effects of the action to the species will occur through implementation of the Project over the period of the Project life (50 years). Effects as a result of the Project construction, operations, maintenance, and repair is likely to result in mortality or potential injury to eggs, larvae and pupae, subadults (tenerals) and adults.

Crushing and desiccation of individuals– The Project is likely to result in effects to ABBs through the loss of individuals, including eggs and larvae in brood-rearing chambers, due to mortality caused by crushing from construction equipment and vehicle traffic after exposure during excavation. Removal and physical alteration of vegetation and soil during excavation and grading would resulting in injury or mortality to ABBs. Emergency repairs and other

maintenance activities requiring ground disturbance will affect the ABB similar to construction activities.

Activities involving physically altering soils is likely to expose ABB adults, larvae, and eggs, which would result in desiccation, leading to injury or mortality. For the purposes of this analysis, it is assumed that any ABB occupying an area physically disturbed by the Project will suffer mortality via crushing from construction equipment or desiccation as a result of exposure. It is unlikely that ABB would use any temporarily disturbed areas after the initial disturbance. Therefore, ABB would not be at an elevated risk of crushing or desiccation from the repeated use of a temporarily disturbed area by construction equipment.

Vehicle use and the minor, infrequent vegetation maintenance during operation of the pipeline or power lines, without soil disturbance and excavation, is unlikely to crush or expose individuals, as these activities would occur while ABBs are buried, either during the day or during the ABB inactive season, when risk of impacts to ABBs from these activities is very low (Hoback 2016, p. 26).

Habitat disturbance/loss - Construction activities would also lead to effects on the species through effects on its habitat, namely temporary habitat loss, permanent alteration of suitable habitat to unsuitable habitat, and habitat fragmentation where the pipeline and power lines are not already co-located with other utilities. The ABB is also sensitive to soil moisture and dies when desiccated (Bedick et al. 2006, pp. 27-28). Beetles seek soils containing high moisture levels when they are inactive and soil moisture would be reduced across the ROW as the site is prepared by removing vegetation and topsoil, and grading. Equipment operations within the pipeline ROW would compact the substrate; however, as described above under conservation measures, sub-soil and soil would be de-compacted and vegetation cover would be re-established within both the temporary and permanent pipeline ROW. Native vegetation seed would generally be used, unless otherwise directed by the landowner, or as required by USACE conditions if within wetlands. As stated in the Project CMRP (BLM 2019, Appendix B), restoration and revegetation will return the disturbed areas to approximate pre-construction vegetation, use, and capability. This involves soil treatment, monitoring at least every three weeks, and repair by Keystone where unsuccessful seed germination or erosion has occurred, and topsoil replacement and contour restoration in wetlands. Wetland edges and adjacent upland areas would be stabilized by establishing permanent erosion control measures and revegetation, as applicable, during final cleanup. Breeding, feeding, and sheltering activities will be affected by any activities that occur in the active season. Prey and carrion availability are likely to be affected by the temporary and permanent loss of habitat since prey will move out of the disturbed areas and not return until those temporarily disturbed areas are restored, in approximately four years. Emergency repairs and other maintenance activities in ABB habitat would result in habitat disturbance and loss, similar to construction activities.

Construction of power lines would not permanently remove ABB habitat except where pole structures would be installed. For substations or switching stations, it is assumed that all areas within a proposed development site would no longer provide habitat for the ABB after construction begins.

Fragmentation of habitat - The majority of pipeline construction access routes will be temporary and will be restored to their previous habitat condition upon completion of construction. Meeting the success criteria for restoration may take up to four years following completion of construction activities. However, prior to the completion of this restoration, temporary access routes would result in the short-term fragmentation of ABB habitat. Emergency repairs and other maintenance activities in ABB habitat would result in habitat fragmentation, similar to construction activities. Vertebrate scavengers (i.e., American crows, skunks, raccoons) that compete for prey sources can use these temporary access routes as travel corridors into unfragmented grassland habitat (though less likely than corridors made through forested area), thus increasing competition for ABB until the disturbed areas are restored. However, once revegetated, temporary access routes will not present a permanent travel corridor for vertebrate scavengers into grassland habitats, thereby eliminating this potential form of competition.

Trees eliminated from the power line ROW might influence the quality of habitat for the ABB, however, it would not remove any suitable habitat or change current habitat ratings. Tree removal would increase habitat fragmentation and may create a corridor, thus increasing vertebrate scavenger competition as described above.

Degradation of habitat from lighting - Activities may occur in limited instances at night and will require some form of artificial lighting. The ABB, like many insects, is attracted to artificial lighting (Service 1991, p. 29). This attraction to lighted construction areas may disrupt normal ABB feeding behavior or increase the risk of predation by attracting individuals to areas unsuitable for ABB use. Beetles would be attracted to artificial lighting only during the active season of June through August (Service and NGPC 2008, entire). However, to minimize effects during the active season, most construction would take place during daylight hours and construction areas would generally not use artificial lighting. Activities that could potentially require lighting include critical pipeline tie-ins (connection of a pipeline to a facility, other pipeline systems or different sections of a pipeline), HDD crossings, and certain work required after sunset due to weather, safety, or other proposed-Project requirements. HDD crossings would require 24-hour operation until the crossing is completed. Where such activities require lighting, the lights will be down shielded. Lighting required for contractor yards and pump stations will also be down shielded, except where required for safety and security, and will utilize sodium vapor or warm, amber colored LED lighting (color temperature of 3000K or less and no greater than 70,000 lumens) to minimize effect to ABB. During Project operations, lights associated with aboveground facilities will only use on sodium vapor light or warm, amber colored LED lighting (color temperature of 3000K or less and no greater than 70,000 lumens) with downshield, as recommended by NGPC (NGPC 2019b, entire). We anticipate that these minimization measures will limit the likelihood of attracting ABB's to the active construction and operations areas, thereby reducing effects from lighting.

Temporary disruption of behavior - Increases in human activity, vehicle traffic, and noise as a result of Project activities are likely to cause ABBs to avoid areas occupied by construction personnel and equipment that may otherwise be present in suitable habitat. ABB avoidance of construction personnel and equipment is expected to be temporary.

Overwintering impacts - ABBs could be affected by the operating pipeline during the inactive season (October through early April). As previously discussed, active periods are correlated to night air temperatures. Oil transport through the pipeline releases heat that is dissipated through the soil to the ground surface. Geothermal models indicate the potential for the pipeline to warm surface areas by as much as 10°F in northern regions (South Dakota and Nebraska) (BLM 2019, Appendix E). It is unknown whether the ABB would be attracted, repelled, or neither, to soil that is artificially warmed. ABBs in Nebraska and South Dakota likely have a slowed metabolism during months where temperatures are below zero (BLM 2019, p. 116). It is unknown whether ABBs would suffer mortality from starvation if they were kept from freezing, but substantial decreases in length of time soil temperatures are below freezing would likely cause the ABBs to use too much fat energy during the winter months when they are underground. While they are underground, warming of the soil from the pipeline may also cue the ABBs to emerge prematurely (i.e., prior to late May or early June) when midnight air temperatures have not yet reached 60 °F. This may result in ABBs above ground without the ability to feed appropriately, or it may cause them to use more energy resources to rebury themselves in the soil, assuming temperatures permit such an activity. The existing literature suggests varying depths at which the ABBs overwinter (Service 2019a, p. 9), further complicating an evaluation of thermal effects. The Pipeline Temperature Effects Study conducted by Keystone in 2009 evaluated potential temperature changes at varying depths (i.e. 6, 12, 24 inches), and various distances from the pipeline (BLM 2019, Appendix E). The study predicted a reduction in the incidence of frozen soils at a depth of 12 inches and a distance of 11 feet from the pipeline centerline. The estimated total duration of unfrozen soils would likely be sufficient to affect ABBs overwintering within 11 feet from the pipeline centerline. While uncertainties were noted, temperature shifts above background levels substantial enough to influence habitat out to 11 feet from the pipeline (i.e., a 22-foot sub-corridor) were determined to make habitat unsuitable for ABB overwintering. Temperature related effects from pipeline operations to overwintering ABBs would be anticipated to occur annually once habitat restoration is complete (within four years) for the remaining duration of the Project life (46 years).

In summary, effects from the Project operations that modify soil temperature could increase overwintering mortality by (1) triggering early emergence when prey is not available and when cold temperatures could result in adult mortality; (2) causing higher metabolism for these insects resulting in starvation prior to emergence; or (3) causing mortality from the ABBs losing too much water because warmer temperatures result in greater desiccation risk to burying ABBs (Bedick et al. 2006, pp. 27-28).

Exposure to Potential Oil Spill - Under 50 C.F.R. §402.02, an effect or activity is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Under 50 C.F.R. §402.17(b), the conclusion of reasonably certain to occur must be based

on clear and substantial information. The determination of a consequence to be reasonably certain to occur must be based on solid information and should not be based on speculation or conjecture. This added term also does not mean the nature of the information must support that a consequence must be guaranteed to occur, but rather, that it must have a degree of certitude (50 C.F.R. §Part 402).

Potential oil spills could occur anywhere along the pipeline system. The timing, location, and magnitude of a potential oil spill along the pipeline is unknown, thereby increasing uncertainty of consequences to the ABB. While crude oil exposure has the potential to cause effects to individual ABBs, there is uncertainty related to the amount, location, and timing of effects to the ABB resulting from a crude oil spill from the pipeline. The uncertainty is due to the low probability of a spill and low probability of a spill coinciding with the presence of ABBs (BLM 2019, Appendix C). Despite the BA's determination that effects could be caused by oil spills, it is the Service's opinion that effects from an oil spill are not reasonably certain to occur.

If a Federal agency is involved in a response to an oil spill associated with the Project, the Federal agency may choose to initiate an emergency section 7 consultation with the Service on the Federal actions associated with the response (50 CFR 402.05). The Federal agency would submit information on the nature of the emergency action(s), the justification for the expedited consultation, and the impacts to endangered or threatened species and their habitats.

Species Response to the Proposed Action

Project effects on all life stages of individual ABBs will occur through disturbance, injury, or mortality during construction and operation. These effects can be estimated using an occurrence rate and the acres of suitable habitat affected (BLM 2019, Table 3.2-15, p. 115). The occurrence rate was estimated by BLM using the results of 2018 and 2019 surveys by Dr. Wyatt Hoback submitted to the Service in combination with a dataset from the Service showing all other ABB survey data within 1 mile of the Project. The number of ABBs affected is estimated by multiplying ABB habitat impacted (acres) by the estimated ABB density (ABBs per acre). This approach is consistent with other assumptions and abundance estimation methods in Nebraska, including the R line (Service 2019b, pp. 25-26). The estimate of individuals affected per acre is intended to be conservative, as it is based mostly on trapping results in high-quality habitats (prime and good), whereas impacts will occur across all habitat qualities. The estimate also factors in potential reproductive output, typically around 15 offspring per two adults (Service 2019a, p. 19). Using this approach, the estimated occurrence rates are 0.0899 ABBs per acre in South Dakota, 0.0046 ABBs per acre in Nebraska in Boyd County and Keya Paha County, and 0.0495 ABBs per acre in Nebraska in Holt County.

Pipeline Construction - The anticipated disturbance to the ABB habitat in South Dakota and Nebraska includes approximately 759.31 acres (314.22 in South Dakota + 445.09 in Nebraska) of temporary impacts and 485.8 acres (197.33 in South Dakota + 288.47 in Nebraska) of permanent impacts as a result of the proposed pipeline construction activities over the 50 year life of the ITP. In total (permanent and temporary) an estimated 733.56 (445.09+288.47) acres of habitat in Nebraska and 511.564 (314.223 + 197.33) acres in South Dakota (marginal, fair,

good, and prime) will be affected. In South Dakota and Nebraska, total habitat affected is 1,245.12 acres (Table 1 below in Summary of Effects). The Restoration Management Plan will ensure that the temporary impacts to habitat are restored to provide suitable habitat for the ABB and its carrion within four years post construction of the pipeline.

Based on the occurrence rates and the acres of suitable habitat that would be affected, total beetles affected by the proposed pipeline construction in Nebraska and South Dakota is estimated at 65 ABBs (see Table 1 below and BLM 2019, p. 115 for detailed calculations).

Pipeline Operations - It is not known whether the ABB considers surface soil temperature when selecting an overwintering site, although it is known that burying ABBs typically remain just below the frost line (Hoback and Conley 2014, pp. 22-24). However, assuming the ABB chooses an overwintering site without regard to soil temperature or other effects of the pipeline, approximately 83 acres of potentially suitable habitat in South Dakota, 65 acres of potentially suitable habitat in Nebraska in Boyd County and Keya Paha County, and 57 acres of potentially suitable habitat in Nebraska in Holt County would be affected during the ABB overwintering season during pipeline operation. Construction would remove suitable habitat for an estimated four years (construction followed by restoration), so approximately 46 seasons of ROW temperature increase from pipeline operation may impact overwintering ABBs. Using the same density estimates (ABBs per acre) as described above, and assuming that heat from the pipeline would affect any adult or teneral ABB that overwintered each inactive season within 11 feet of the pipeline, the total ABBs affected by heat produced from pipeline operations in Nebraska and South Dakota is estimated at 485 ABBs (see Table 1 below and BLM 2019, p. 118, for a detailed calculations).

Pipeline Repair and Maintenance - Emergency repairs and other maintenance activities are also anticipated to affect all life stages of the ABB, particularly when such activities involve excavation (BLM 2019, p.118). Emergency repairs may be completed at location and times that ABBs are active. This could lead to effects on individuals as described above for pipeline construction. Keystone estimates that less than 10 acres of suitable habitat would be affected by such activities. This is based on the following assumptions: (1) there will be 10 surveys over the 50 years to look for any locations needing maintenance, (2) history of similar pipeline operations indicates that there will be 0.05 location per mile per survey that would require some kind of maintenance, (3) each maintenance location will involve an area measuring approximately 110 feet wide by 50 feet long, totaling approximately 0.13 acre per location, and (4) all locations would occur in suitable habitat. Factoring these assumptions with the length of the proposed pipeline system within the range of the ABB leads to an estimate of somewhat less than 10 acres affected. Rounding up to 10 acres and apportioning these 10 acres across the counties according to the length of pipeline system within each county and factoring the affected area with the estimated number of individuals per acre, total beetles affected by emergency pipeline repair and maintenance in Nebraska and South Dakota combined is estimated at one ABB (see Table 1 below and BLM 2019, p. 119 for a breakdown of calculations).

Potential Oil Spill - As explained above, effects from oil spills are not reasonably certain to occur. Any injury to natural resources, including the ABB, associated with a release of oil or

hazardous substances or the response to a release of oil or hazardous substances is not exempted under this BO and therefore, an estimated number of ABBs affected by oil spills was not calculated.

Power Infrastructure Construction and Operations- New power infrastructure for three power lines, a substation rebuild, and a switching station coincide with potentially suitable ABB habitat. This power infrastructure would serve PS-20 and PS-21 in Tripp and Gregory counties, South Dakota, and PS-22 in Holt County, Nebraska. The remainder of the power infrastructure required for the Project would not overlap the current range of the species and will not affect ABBs. Construction of power infrastructure to these pump stations could affect the ABB. Power lines would not negatively affect the ABB except where pole structures would be installed. For substations or switching stations, this analysis assumes that all area within a proposed development site would no longer provide habitat for the ABB after construction begins.

Construction of the power line to PS-20 is reasonably certain to result in temporary disturbance, injury, or mortality of individual ABBs where the power line overlaps potentially suitable habitat within the range of this species. Considering that the ABB in Tripp County, South Dakota, only occurs south of U.S. Route 18, only a small portion of this 20.5-mile power line, approximately 2.7 miles, would lie within the range of this species. Within this 2.7 miles, an area of permanent disturbance covering three square feet per pole at 58 poles, a total of 0.004 acres of ABB habitat would be negatively impacted.

Construction of the 20.5-mile long power line to PS-21 is reasonably certain to result in the disturbance, injury, or mortality of individual ABBs where approximately 434 power poles are installed (approximately 0.03 acres). Additionally, rebuilding of WAPA's substation at the north end of this power line is reasonably certain to affect individuals through disturbance of six acres. While WAPA's conservation measure defined above would minimize effects from this substation rebuild, negative impacts from this activity are anticipated due to the permanent elimination of approximately six acres of marginal habitat.

Construction of the 2.5-mile long power line to PS-22 is reasonably certain to result in the disturbance, injury, or mortality of individual ABBs where approximately 54 power poles are installed (0.004 acres). Additionally, the 3.5-acre switching station is likely to affect individual ABBs, though the conservation measure of constructing this power infrastructure during the ABB's inactive period will minimize this. The permanent elimination of 3.5 acres of marginal habitat at the proposed switching station is likely to negatively impact the ABB as described for PS-21 above.

Power infrastructure activities occurring in the inactive season would impact adult and tenerals. Any power infrastructure activities required during the ABB active season would affect all life stages. In summary, power infrastructure will result in 9.54 acres of habitat disturbance in the form of permanent impacts resulting in adverse effects to one ABB (See Table 1 below and BLM 2019 Table 3.2-19, p. 121 for calculations).

Summary of Adverse Effects from All Activities

Overall, pipeline construction is estimated to affect approximately 65 ABBs, power line construction is estimated to affect approximately one ABB, heat impacts from pipeline operations are estimated to affect approximately 485 ABBs, and pipeline repairs are estimated to affect approximately one ABB. The Project is estimated to affect approximately 552 ABBs (Table 1).

Table 1- Estimated American Burying Beetle Habitat Area Affected in South Dakota (BLM 2019, p. 123-124)

State (County)	Miles of ROW	Expected Area Affected (acres)	American Burying Beetles per Acre	American Burying Beetles Affected
Effects of Construction				
Pipeline Construction				
South Dakota	31.0	511.56	0.0899	45.99
Nebraska (Boyd Co. and Keya Paha Co.)	24.4	383.02	0.0046	1.76
Nebraska (Holt Co.)	21.5	350.54	0.0495	17.35
			Subtotal	*65.10*
Power Infrastructure Construction				
South Dakota	23.2	6.04	0.0899	0.54
Nebraska (Boyd Co. and Keya Paha Co.)	0	0.00	0.0046	0.00
Nebraska (Holt Co.)	2.5	3.50	0.0495	0.17
			Subtotal	*0.71*
			Effects of Construction Subtotal	**65.81**
Effects of Operation				
Heat Effects				
South Dakota	31.0	3795.92 [a]	0.0899	341.25
Nebraska (Boyd Co. and Keya Paha Co.)	24.4	2994.60 [a]	0.0046	13.78
Nebraska (Holt Co.)	21.5	2631.66 [a]	0.0495	130.27
			Subtotal	*485.30*
Pipeline Repairs				
South Dakota	31.0	3.00 [b]	0.0899	0.27
Nebraska (Boyd Co. and Keya Paha Co.)	24.4	3.00 [b]	0.0046	0.01
Nebraska (Holt Co.)	21.5	4.00 [b]	0.0495	0.20
			Subtotal	*0.48*
			Effects of Operation Subtotal	**485.78**
			OVERALL PROJECT TOTAL	**551.59**

[a] Given that heat effects could recur in the same places every winter for the 46 years in the life of the Project that the pipeline is expected to operate in potentially suitable, recovered habitat, the number shown represents 46 times the area affected at any one time.

[b] This area is the total expected to be affected during the life of the proposed Project.

Conservation Measures and Mitigation - As described in the DESCRIPTION OF THE PROPOSED ACTION of this BO, the Project proponents (Keystone, the electrical power providers, or WAPA) have committed to several conservation measures that will minimize

impacts to the ABB. Mowing and carrion removal prior to construction will make the habitat less attractive and is likely to reduce the amount of ABBs that will be present in the area prior to construction thus minimizing potential crushing of individuals. Most of the Project activities are planned to occur during daylight hours since ABBs are nocturnal, thus reducing disturbance to ABBs during the time of day when they are active. If Project activities will be conducted at night, lighting that minimizes effects to ABBs will be used to minimize disturbance while they are active. Conservation measures related to soil improvement, erosion and sediment control, and habitat restoration will ensure that the amount of habitat disturbance is minimized. Keystone has also committed to protect 1,034 acres of occupied ABB habitat (Keystone 2019, p. 116). Management and protection on large blocks of higher quality habitat/protected lands will contribute to the resiliency of the ABB population affected by this Project.

CUMULATIVE EFFECTS

Cumulative effects "...are those effects of future state, or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation" (50 C.F.R. §401.02). Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA.

The Service knows of no projects reasonably certain to occur in the action area for which the Service has the level of detail necessary to identify and analyze the amount, location and type of specific effects. Any future projects built in potential ABB habitat would need to work with the Service to comply with the ESA.

Other future non-federal activities that may occur within the action area include non-federal pipelines, power infrastructure, residential and commercial development, state and county road projects creating new disturbed land or additional lighting, conversion of forested habitat to agricultural land, and the conversion of range lands or undeveloped lands to row crop agriculture (BLM 2019, p. 122). Based on historic land use changes in ABB habitat, the conversion of lands to row crop agriculture is likely to have the largest effect on the ABB. While future projects have the potential to impact ABB habitat, the intensity of impacts and whether or not it causes effects to ABB would depend on the number and type of projects built, presence or absence of ABB at the site, geographic location, and other site and project-specific characteristics. If ABB were exposed to impacts, the resulting effects would also depend on the number and types of avoidance, minimization, and mitigation measures that would be implemented for each project.

JEOPARDY DISCUSSION AND CONCLUSION

The Service has analyzed and described the likely adverse effects to the ABB from the Project. The purpose of our analysis was to assess the effects of this Project when combined with the status of the species, the environmental baseline, and any identified cumulative effects in order to form an opinion as to whether this action would be likely to jeopardize the continuing existence of the ABB. The regulatory definition of likely to jeopardize is "...to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both

the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species" (50 C.F.R. §402.02).

Reproduction – We anticipate that habitat disturbances from Project activities during the construction, emergency repairs, and maintenance would prevent ABB reproduction in the action area. Areas with permanent impacts would not be used for ABB reproduction for the life of the Project. For areas with temporary impacts, reproduction is not likely to resume until the disturbed habitat is successfully restored in four years. When construction begins, all ABBs present would be killed and therefore removed from the reproducing population. ABBs would not colonize the area until restored habitat is suitable. Therefore, no reproduction would occur for approximately four years in each area disturbed by construction. Once habitat is restored and prey re-inhabit the area, ABBs in nearby habitat would likely recolonize and begin reproducing. As habitat generalist in terms of vegetation types, if food, moisture, and shelter are present, ABBs should recolonize disturbed areas. Areas temporarily disturbed by construction activities will be used more than one time by Keystone for various activities throughout the construction process and will not be restored until construction is complete. We do not expect ABBs to inhabit the disturbed areas during construction due to the lack of habitat and prey species. Keystone will stabilize, revegetate, and restore temporarily disturbed areas within four years after construction and monitor to ensure successful restoration. The ABB and other disturbed wildlife species, including prey species, are likely to return to the area following construction when personnel and equipment are no longer present and suitable habitat has been restored (within four years of initial disturbance). ABBs returning to the area are expected to resume reproduction within successfully restored habitat. In addition, Keystone has committed to protect and manage a large block, approximately 1,034 acres, of occupied ABB habitat in perpetuity (Keystone 2019, p. 116). This will provide reproductive habitat for the ABB population.

Numbers – We estimate that 552 ABBs (one-time take of 66 ABB from construction, annual take of less than 11 ABBs/year for 46-years of operation and maintenance) will be disturbed, injured or killed as part of the Project during the anticipated 50-year Project lifetime (Table 1, above). ABB population estimates are available for the Sandhills and Niobrara analysis areas (combined into one population estimate) in which the Project passes through. As described above, Amaral et al. (2005, p. 75) did not distinguish or split the two populations and estimated the combined population to be about 10,000 ABBs. Population estimates are not available for the individual analysis areas (Sandhills and Niobrara). The population viability analysis by Amaral et al. (2005, p. 40) concluded that ABB populations of 1,000 or more individuals are viable long-term in the absence of severe catastrophic events or reduction in carrying capacity through a reduction in carcass availability, habitat loss, or fragmentation. Amaral et al. (2005, p. 38) indicates that populations of greater than 10,000 ABB can persist even through catastrophic events. Recently, the Sandhills population was estimated to be 55,743 (NPPD 2018, p. 113). The Service used the ratio of positive to negative ABB surveys to determine ABB relative abundance in population analysis areas (Service 2019a, p. 71). The ratio of positive to negative ABB surveys in the Sandhills analysis area was defined as the highest condition category of "good," with the highest ratio of positive to negative surveys compared to other analysis areas (Service 2019a, p. 95). The Niobrara unit had the second highest proportion of positive to negative surveys (Service

2019a, p. 72). The Project will not impact the long-term persistence of the Sandhills or Niobrara ABB populations because the 552 individuals (one-time take of 66 ABB from construction, annual take of less than 11 ABBs/year for 46-years of operation and maintenance) we expect the Project to take in the form of harm within the permit area represent only a small percentage of the estimated Sandhills and Niobrara populations; this level of population loss does not represent a catastrophic event. With little to no impact on the Sandhills and Niobrara population, we do not expect there would be any effect on the rangewide population estimated by Amaral (2005, p. 37) to be approximately 50,000 individuals. In addition, Keystone has committed to protect and manage a large block, approximately 1,034 acres, of occupied ABB habitat in perpetuity (Keystone 2019, p. 116). This will contribute to the resiliency of the ABB population.

Distribution –The majority of the impacts to the beetle and its habitat will be temporary, but permanent loss of habitat will also occur. Combined, the impacts to approximately 1,265 acres (excluding habitat rated as "poor") for the entire Project represents approximately 0.011 percent of the estimated Sandhills and Niobrara occupied range (combined 11,595,154 acres of potential habitat in the Sandhills and Niobrara areas). As discussed above, the temporarily impacted habitat would not be occupied by ABBs until the habitat is successfully restored within four years after construction. Once restored habitat reaches suitability criteria, ABBs and their carrion species from nearby areas are likely to recolonize. Thus, distribution would change slightly due to this temporary disturbance until recolonization occurs; these aspects of the range would not be permanently affected. However, ABBs would not recolonize the permanently lost habitat areas. But, those acres are scattered throughout the Project area and, even in totality, represent an even smaller fraction of the occupied range of the ABB in the Sandhills and Niobrara populations. Therefore, we do not anticipate any meaningful impacts to the ABB's range wide distribution.

Jeopardy Conclusion

The definition of "likely to jeopardize" hinges on a change to the reproduction, abundance and distribution of a species such that it appreciably reduces the likelihood of both survival and recovery. Therefore, the impacts of the Proposed Action were analyzed to determine the probable effects on reproduction, abundance, and distribution of ABB in the Action Area. The described changes to the ABB's reproduction, abundance, or distribution would have a negative effect on the ABB and its habitat due to the loss of 552 ABBs (one-time take of 66 ABB from construction, annual take of less than 11 ABBs/year for 46-years of operation and maintenance) and impacts to 1,265 acres of habitat (approximately 0.011 percent of the estimated Sandhills and Niobrara occupied range). However, based on the information presented above, we do not anticipate meaningful impacts to ABB reproduction, numbers, or range wide distribution. Additionally, given the impacts on ABB reproduction, numbers, and range wide distribution, the Project will not meaningfully preclude the likelihood of species recovery. The conservation measures, including the restoration of the temporary impact acres to suitable habitat and the protection in perpetuity and long term management of a large block of occupied beetle habitat, approximately 1,034 acres, will minimize the impacts of the Project and support recovery of the ABB. Therefore, this Project is not likely to reduce appreciably the likelihood of both the survival and recovery of this listed species in the wild. It is the Service's Biological Opinion that the Project is not likely to jeopardize the continued existence of the ABB.

INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulation pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without a special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is defined by regulation as "an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering" (50 C.F.R. §17.3). Harass is defined by regulation as "… an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding or sheltering" (50 C.F.R. §17.3). Incidental take is defined as "takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant" (50 C.F.R. §402.02). Under the terms of section 7(b)(4) and section 7(o)(2), such taking is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of this incidental take statement (ITS).

The ITS serves to enumerate or identify the amount or extent of take "caused by" all the effects of the action and exempts the action agencies from the prohibitions against that take under section 9 of the ESA. Here, take of ABB would not occur "but for" the proposed Federal actions. Given the scope of the effects of the Federal actions, it follows that the majority of the take exempted for the Federal agencies is occurring on lands that are outside the jurisdiction of the Federal agencies, or is related to activities undertaken by the applicant not under the authority of a Federal agency, with exception of the rebuilding of the WAPA substation within ABB habitat and RUS financing of power infrastructure. Therefore, this ITS does not extend the Federal agencies' take exemption to Keystone for the take caused by the Project's actions. Instead, Keystone is developing a HCP to support its application to the Service for a section 10(a)(1)(B) incidental take permit for the ABB for their activities on non-federal lands.

For the exemption in ESA section 7(o)(2) to apply to the Federal actions considered in this BO, Federal agencies must undertake the commitments to species' conservation measures under their jurisdiction that are described in the BA and BO, particularly in: 1) the DESCRIPTION OF PROPOSED ACTION section of this BO[6], and 2) the Species Conservation Measures in the EFFECT EVALUATION section of the BA (BLM 2019, pp. 30-164). These species' conservation measure commitments are non-discretionary measures and must become binding conditions of any permit, contract, or grant issued for implementing the action. Consistent with ESA section 7(b)(4)(C)(iv), the Federal agencies have a continuing duty to regulate the action components covered by this ITS that are under its jurisdiction. The protective coverage of §7(o)(2) may lapse if the Federal agencies fails to:

[6] Some conservation measures for the ABB were updated since the submission of the BA (BLM 2019), based on review and discussion with Federal agencies. Therefore, the Service is relying on the conservation measures for the ABB in this BO rather than the ABB conservation measures in the BA.

- assume and implement the non-discretionary species' conservation measures applicable to the Federal agency; or
- require a permittee, contractor, or grantee to adhere to the non-discretionary species' conservation measures applicable to the Federal agency through enforceable terms that are added to the permit, contract, or grant document.

The Service believes all species' conservation measures necessary and appropriate to minimize take of ABB have been incorporated into the proposed action (See the DESCRIPTION OF PROPOSED ACTION section of this BO and Species Conservation Measures in the EFFECT EVALUATION section of the BA (BLM 2019, pp. 30-164)). The Service has given appropriate consideration to the beneficial actions proposed by the Federal agencies and Keystone (50 C.F.R. §402.14(g)(8)). Therefore, no terms and conditions or reasonable and prudent measures are necessary for Federal agencies for this ITS (see REASONABLE AND PRUDENT MEASURES and TERMS AND CONDITIONS sections below).

In order to monitor the impact of incidental take, the Federal agencies must report, within their jurisdiction, the progress of the action and its impact on the species to the Service as specified in this ITS.

AMOUNT OR EXTENT OF TAKE ANTICIPATED

Estimating take of insects such as the ABB is challenging because ABB numbers fluctuate substantially. The take calculation is based on the density of ABBs at the time that surveys were conducted. The Service knows of no approach that provides a better means of estimating ABB numbers and densities in the action area. The Service anticipates that the Project is reasonably certain to cause incidental take of individual ABB in the form of harm. Harm will result from death or injury of ABB from construction of the pipeline and power infrastructure, emergency repairs and maintenance of the pipeline, and pipeline operations. The methodology for calculating take is further described in the Species Response to the Proposed Action section in this BO.

Activities associated with pipeline construction are anticipated to result in an estimated one-time take of 65 ABBs. Activities associated with power infrastructure construction will account for an estimated one-time take of one ABB. Activities associated with emergency repairs and maintenance of the pipeline will account for an estimated take of one ABB. Activities associated with pipeline operations specific to heat related impacts will account for an estimated take of 485 ABBs. The combined total take of 486 ABBs from heat related impacts and pipeline emergency repairs and maintenance will occur over the 46-year life of the Project after restoration. Averaged annually, these activities would result in take of less than approximately 11 ABBs per year. No take is authorized for oil spills. In total, the Project (pipeline construction, operations, emergency repairs, and power infrastructure) is anticipated to result in incidental take of 552 ABBs in South Dakota and Nebraska over the 50-year duration of the Project.

EFFECT OF THE TAKE

In this BO, the Service determines that this level of anticipated take is not likely to result in jeopardy to the ABB.

REASONABLE AND PRUDENT MEASURES

The Service believes that all conservation measures necessary and appropriate to minimize take of ABB have been incorporated into the proposed action (See DESCRIPTION OF PROPOSED ACTION). The Service has given appropriate consideration to the beneficial actions proposed by the Federal agencies and Keystone (50 C.F.R. §402.14(g)(8)). Therefore, no RPMs are necessary for this ITS.

TERMS AND CONDITIONS

No reasonable and prudent measures to minimize the impacts of incidental take caused by the action are provided in this ITS; therefore, no terms and conditions for carrying out such measures are necessary.

MONITORING AND REPORTING REQUIREMENTS

In order to monitor the impacts of incidental take, the Federal agencies must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement (50 C.F.R. §402.14(i)(3)). This section provides the specific instructions for such monitoring and reporting (M&R). As necessary and appropriate to fulfill this responsibility to monitor and report the progress of the action and its impact on the species, the Federal agencies must require any permittee, contractor, or grantee to accomplish the monitoring and reporting requirements that apply to action components under its jurisdiction through terms that are added to the permit, contract, or grant document. Such terms must include a requirement to immediately notify the Federal Agencies and the Service if the amount or extent of incidental take specified in this ITS is exceeded during action implementation or if the action and its impact on the listed species has changed.

M&R #1. Annual Report. The Federal agencies are responsible for ensuring that the Project activities under their jurisdiction are implemented as described in the Project description. Upon initiation of activities, each Federal agency will provide the Service with an annual report that describes all activities that were covered under the biological opinion under each Federal agency's respective jurisdiction. The report will include a summary of completed construction activities and the conservation measures that were implemented for that year. Annual reporting for each agency will continue until activities under their jurisdiction have been completed

Procedures for Handling and Disposing of American Burying Beetles

If a dead or impaired ABB is found, care should be taken in its handling to preserve biological materials in the best possible state for later analysis of cause of death. In conjunction with the care of injured endangered or threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to ensure that evidence associated with the specimen is not unnecessarily disturbed. The dead or impaired ABB should be photographed prior to disturbing it or the site. The Service is to be notified within three (3) calendar days upon locating a dead or injured ABB. Initial notification must be made to the applicable Service

Office of Law Enforcement for Nebraska at (316) 788-4474. Then the Nebraska Ecological Services Field Office at (308) 382-6468. Notification must include the date, time, precise location of the injured animal or carcass, and any other pertinent information. Formal written notification also must be submitted within seven (7) calendar days.

All dead or moribund adults should be salvaged by placing them on cotton in a small cardboard box as soon as possible after collection. The date and location of collection should be included with the container. Specimens should then be furnished to the repository identified by the appropriate Ecological Services Field Office for deposition in their collection of invertebrates, or to another suitable site approved by the Service.

REINITIATION NOTICE

This concludes consultation on the actions outlined in the request. As provided in 50 C.F.R. §402.16:

(a) Reinitiation of consultation is required and shall be requested by the Federal agency or by the Service, where discretionary Federal involvement or control over the action has been retained or is authorized by law and:

(1) If the amount or extent of taking specified in the incidental take statement is exceeded;

(2) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered;

(3) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion or written concurrence; or

(4) If a new species is listed or critical habitat designated that may be affected by the identified action.

(b) An agency shall not be required to reinitiate consultation after the approval of a land management plan prepared pursuant to 43 U.S.C. 1712 or 16 U.S.C. 1604 upon listing of a new species or designation of new critical habitat if the land management plan has been adopted by the agency as of the date of listing or designation, provided that any authorized actions that may affect the newly listed species or designated critical habitat will be addressed through a separate action-specific consultation. This exception to reinitiation of consultation shall not apply to those land management plans prepared pursuant to 16 U.S.C. 1604 if:

(1) Fifteen years have passed since the date the agency adopted the land management plan prepared pursuant to 16 U.S.C. 1604; and

(2) Five years have passed since the enactment of Public Law 115-141 [March 23, 2018] or the date of the listing of a species or the designation of critical habitat, whichever is later

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