



U.S. Fish and Wildlife Service

# **Environmental Assessment**

## **For the Issuance of an Incidental Eagle Take Permit for Glenrock I, Glenrock III, and Rolling Hills Wind Energy Projects**

### **Wyoming**

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**May 2021**

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This EA was prepared using NEPA regulations that expired on September 14, 2020. Agencies have the option of proceeding under the expired NEPA regulations if a project was begun prior to September 14, 2020, as is the case here. See 40 C.F.R. § 1506.13

## 1. Introduction

This Environmental Assessment (EA) is prepared to analyze the environmental consequences of the U.S. Fish and Wildlife Service (Service) issuing an incidental eagle take permit (IETP) for the take of bald (*Haliaeetus leucocephalus*) and golden (*Aquila chrysaetos*) eagles associated with the existing and operational Glenrock I, Glenrock III, and Rolling Hills Wind Energy Projects (collectively “Project”), pursuant to the National Environmental Policy Act (NEPA) (42 United States Code [U.S.C.] §§ 4321–4347). NEPA’s supporting regulations are at 40 C.F.R. Part 1500; see also 46 C.F.R. Part 46. It is a discretionary Federal action for the Service to issue an IETP under the Bald and Golden Eagle Protection Act (Eagle Act), (16 U.S.C. §§ 668–668d; see also 50 C.F.R. § 22.26). This Federal action is therefore subject to NEPA. This EA assists the Service in ensuring compliance with NEPA, and in making a determination as to whether any “significant” impacts could result from the analyzed actions that would require preparation of an Environmental Impact Statement (EIS). This EA evaluates the effects of alternatives for our decision whether to issue an IETP.

The Eagle Act authorizes the Service to issue eagle take permits only when the take is compatible with the preservation of each eagle species, defined (Service 2016) as “consistent with the goals of maintaining stable or increasing breeding populations in all eagle management units and the persistence of local populations throughout the geographic range of each species.” The Eagle Act authorizes incidental take of eagles when take is associated with, but not the purpose of, an activity (50 C.F.R. §22.26).

The applicant, PacifiCorp DBA Pacific Power/Rocky Mountain Power (Applicant), is requesting Eagle Act take coverage for operational activities associated with the 237 megawatt (MW) total output wind farm located in Converse County, Wyoming. The Project consists of 158 wind turbines and associated infrastructure (roads, transmission lines, etc.) and has been operational since January 17, 2009. The expected life of the project is at least 30 years. The Applicant submitted an IETP application and Eagle Conservation Plan (ECP; Attachment A) to the Service on March 18, 2019, requesting the maximum 30-year permit.

The Applicant is requesting an IETP for the take of up to 1.43 bald eagles and 10.86 golden eagles annually, over the 30-year project. This EA evaluates whether issuance of the IETP will have significant impacts on the existing human environment. “Significance” under NEPA is defined at 40 CFR § 1508.27 (of the expired NEPA regulations), and requires consideration of both short and long-term effects. *Id.* Significance requires consideration of both context and intensity. *Id.*

This proposal conforms with, and carries out, the management approach analyzed in, and adopted subsequent to, the Service's Programmatic Environmental Impact Statement for the Eagle Rule Revision, December 2016 (PEIS; Service 2016). The PEIS is incorporated herein by reference, as authorized by 50 C.F.R. 1501.12. As authorized by the NEPA regulations, this EA tiers from the 2016 PEIS (50 C.F.R. 1501.11).

Project-specific information not considered in the PEIS (Service 2016) will be considered in this EA as described below.

Since the project became operational in 2009, it has been responsible for the deaths of 38 golden eagles and one bald eagle. On December 19, 2014, the Applicant pled guilty in U.S. District Court of Wyoming, to two counts of misdemeanor unlawful take of migratory birds. This resulted in fines, restitution, and community service in the form of a probationary period including a list of Mandatory Conditions of Probation. This includes the implementation of a Migratory Bird Compliance Plan (MBCP), which was developed with assistance from the Service. The purpose of the MBCP is to outline a framework for implementation of avoidance and minimization measures to ensure compliance under requirements of the Migratory Bird Treaty Act (MBTA), 16 U.S.C. § 703-712, and the Eagle Act. The MBCP will remain in place until it is replaced by an IETP. Despite the implementation of the avoidance and mitigation measures outlined in the MBCP, some incidental take of migratory birds and eagles may still occur. As part of the Plea Agreement, as long as the Applicant continues to implement the MBCP and diligently pursues obtaining the IETP, the government would extend its "non-prosecution" agreement under the Eagle Act. The Plea Agreement remains in place until either ten years after the sentencing, or the Applicant obtains an IETP which replaces the MBCP.

### 1.1 Purpose and Need

The Service's purpose in considering the proposed action is to fulfill our authority under the Eagle Act and its implementing regulations. Applicants whose otherwise lawful activities may result in take of eagles, can apply for an IETP so that their projects may proceed without potential violations of the Eagle Act. Under the Eagle Act regulations, the Service may issue an IETP for eagle take that is associated with, but not the purpose of, an activity (50 C.F.R. § 22.26). Such permits can be issued by the Service when the take that is authorized is compatible with the Eagle Act preservation standard; is necessary to protect an interest in a particular locality; is associated with, but not the purpose of, the activity; and cannot be practicably avoided. *Id.*; see also 81 Fed. Reg. 91494 (2016)). The preservation standard under the Eagle Act means to be consistent with the goals of maintaining stable or increasing breeding populations in all eagle management units and the persistence of local populations throughout the geographic range of each species (50 C.F.R § 22.3).

The need for this action is a decision on an IETP application from the Applicant. The decision must comply with the Eagle Act and all applicable regulatory requirements, and must be compatible with the preservation of eagles.

## 1.2 Authorities

Service authorities are codified under multiple statutes that address management and conservation of natural resources from many perspectives, including, but not limited to the effects of land, water, and energy development on fish, wildlife, plants, and their habitats. This analysis is based on the Eagle Act (16 USC §§ 668–668e) and its regulations (50 C.F.R, Part 22). The PEIS (Service 2016) has a full list of authorities that apply to this action (PEIS Section 1.6, pages 7-12), which are incorporated herein by reference.

## 1.3 Background

The Applicant is the developer and operator of the Project located in Converse County, Wyoming, approximately 15 miles (24 kilometers) due north of Glenrock, Wyoming (Figure 1).

The Project is located on the southwestern edge of the Powder River Basin Coal field within the Wyoming Basin ecoregion. Within the Project area, the topographic elevation ranges from approximately 5,750 to 5,898 feet (1,753 to 1,798 meters) above sea level and is characterized by rolling hills and sandstone capped buttes. The most common land cover types in the Project area are herbaceous grassland communities and shrub/scrub (native sagebrush steppe). The Project is located on 14,000 acres (5,666 hectares) of privately held fee lands owned by the Applicant.

The Project was constructed primarily on reclaimed coal mine lands that were part of the former Dave Johnston mine. The mine operated from 1958 to September 2000. Final surface mine reclamation activity began in 1999 and ended in 2005; however, contemporaneous reclamation efforts began as early as the mid-1960s. The Applicant worked with the Wyoming Department of Environmental Quality (WYDEQ) to modify reclamation permit conditions to allow for the construction of the wind energy project.

Construction of the Project commenced in March 2008 and operations began on January 17, 2009. The initial Project development consisted of 158 General Electric 1.5 megawatt (MW) wind turbine generators, all with a tower height of 262 feet (80 meters) secured to concrete foundations and a blade diameter of 253 feet (77 meters), with a total output of 237 MW. In addition to the wind turbine generators, other Project facilities include: access roads, crane pads, a laydown area, batch plant, communication/collection systems, substation, operation, and maintenance building, meteorological (MET) towers, and 13 miles (21 kilometers) of 230-kilovolt transmission line connecting the Project from PacifiCorp's Windstar switching substation to the Dave Johnston thermal energy generation facility. Standardized Post Construction Monitoring (PCM) (eagle mortality) and eagle nest surveys were conducted from 2009 through 2012. Continued studies since 2012 consist of eagle nest surveys, prey habitat mapping, eagle attractant, and use assessments.

The Applicant repowered 126 of the existing 158 wind turbine generators (Figure 1) with new nacelles and rotors in 2019. The remaining 32 turbines were not repowered. The repowered wind turbine generator is rated at 1.85 MW, has 299-foot (91-meters) rotor diameters, 413-foot (126-

meters) hub height, and a total height of 413 feet. Construction of the Project commenced in March 2008 and operations began on January 17, 2009. Continued studies since 2012 consist of eagle nest surveys, prey habitat mapping, eagle attractant, and use assessments.

As a commitment to the protection and conservation of bald and golden eagles, the Applicant has developed an ECP for the Project (Attachment A, incorporated herein by reference). The Project-specific ECP has been written in coordination with the Service and follows the Eagle Conservation Plan Guidance, Version 2 (ECP Guidance, Service 2013a), and the Service regional guidance memo “Final Outline and Components of an Eagle Conservation Plan (ECP) for Wind Development, Recommendations from USFWS Region 6” (Service 2013) for successful development and compliance with the Eagle Act. The ECP documents how the Project’s siting, design, and planned operation will accomplish (or is currently accomplishing) avoidance and minimization of bald and golden eagle take when the take is associated with, but not the purpose of, an otherwise lawful activity, and cannot practicably be avoided. The ECP further details the implementation of compensatory mitigation, necessary to mitigate the potential take of golden eagles at the Project site.

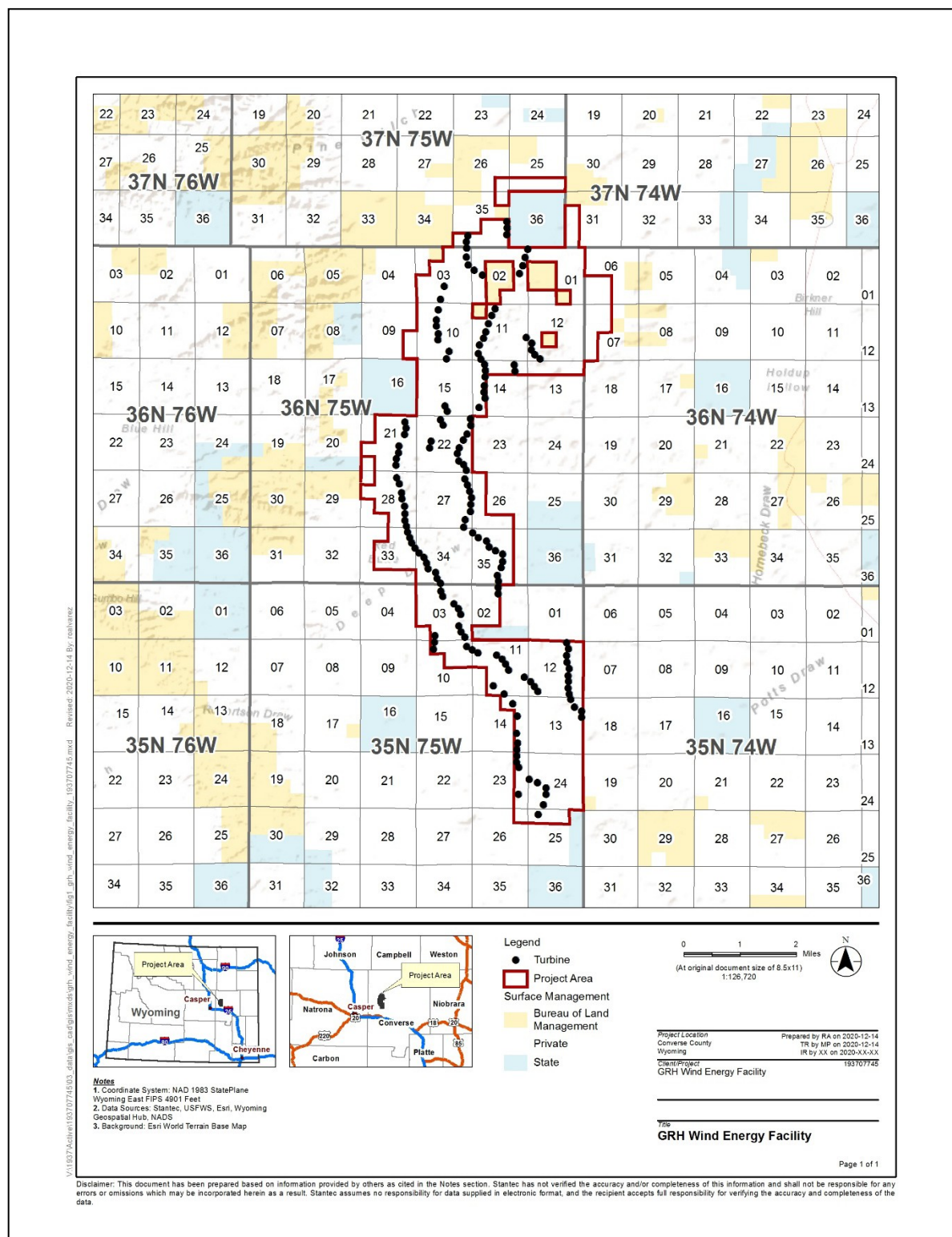


Figure 1. Glenrock Rolling Hills Wind Energy Project Area and Turbines



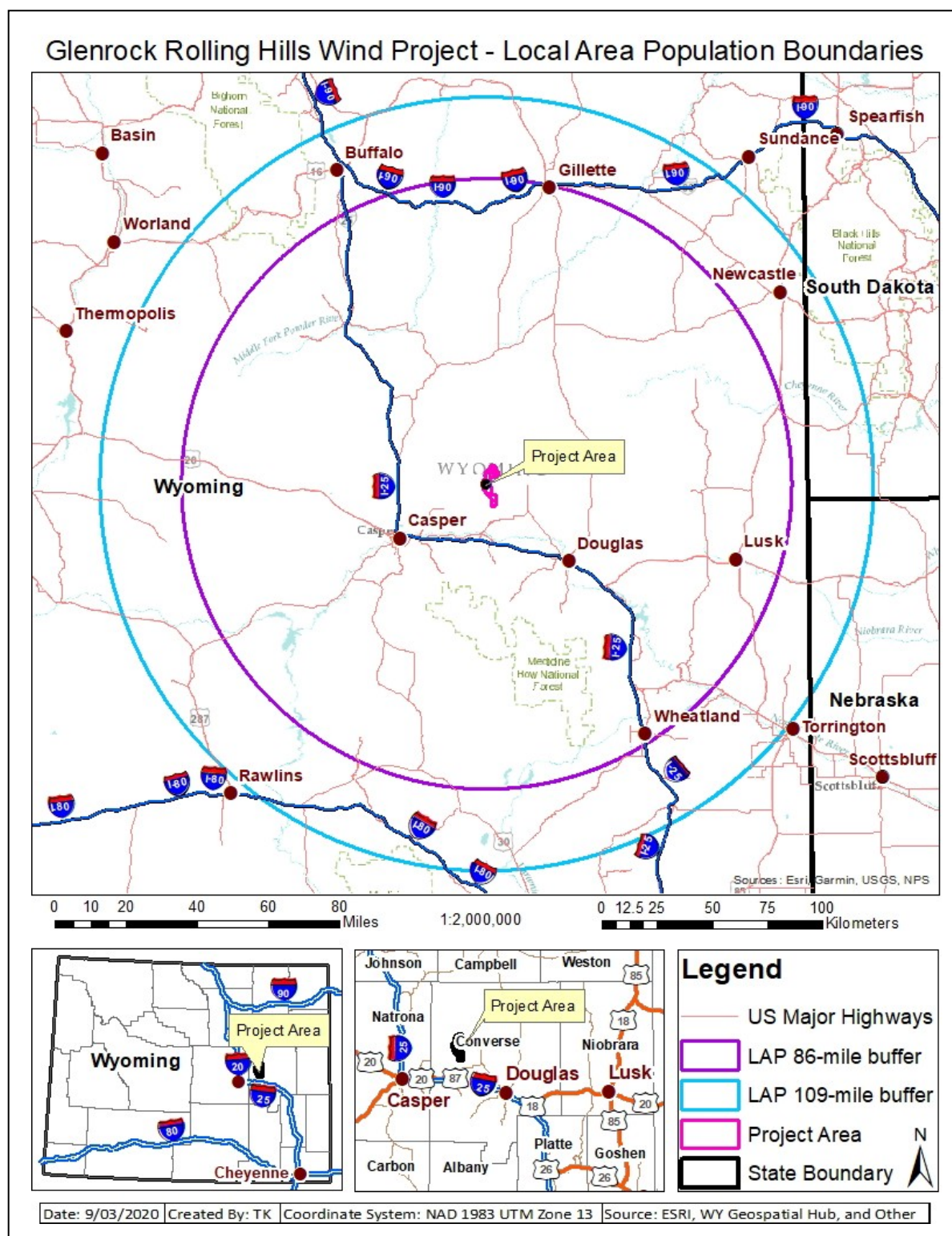


Figure 2. Glenrock Rolling Hills Wind Project Boundary and Local Area Population (LAP) Boundary Map



## 1.4 Scoping, Consultation and Coordination

This EA incorporates by reference the scoping performed for the PEIS (Chapter 6, page 175). Additionally, the Applicant worked closely with the Service and the Wyoming Game and Fish Department (WGFD) to develop the ECP in support of its application to avoid, minimize, and mitigate adverse effects on eagles; however, the Service was not involved in the siting of Project infrastructure. Furthermore, the Project was built and in operation prior to the release of *U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines* (Service 2012) and *Eagle Conservation Plan Guidance Module 1 – Land-based Wind Energy* (Service 2013a). Guidance and recommendations in these documents that have since been encouraged and enforced, further aid to reduce impacts associated with wind energy development.

The Applicant has communicated with the Service and the WGFD about the Project since 2007. WGFD was also a member of the Technical Advisory Committee established with the Service and other stakeholders for the Project in 2011. Agency communications, recommendations, and involvement are described throughout the ECP. In addition, the Applicant has applied for and received Chapter 10 (Number 1545) and Chapter 33 (Number 696) permits from the WGFD. The Chapter 10 permit authorizes the Applicant to import, possess, confine, transport, sell and/or dispose of live wildlife. The Chapter 33 permit is a scientific resource, education/display, or special purposes permit that allows the Applicant to possess and remove birds and mammals on and within one-mile of the Project area. As a stipulation of the permit, the Applicant will provide annual reports to the WGFD. The Applicant will renew permits as necessary to complete the Project activities.

The Wyoming Industrial Siting Council issued a permit to the Applicant to construct and operate the Project in March 2008, after a February 2008 public hearing on the Project. As part of the Industrial Siting Council permit process, the Applicant met with several state, federal, and local agencies, including the Wyoming Department of Environmental Quality, the WGFD, and the Service. The meetings were held to provide an overview of the Project and the Industrial Siting Act process, discuss baseline data collected, address any issues and concerns (including pre- and post-construction monitoring), and answer questions. In addition, two public open houses were held in Rawlins, Wyoming in July 2007, and in Glenrock, Wyoming in August 2007, and a state agency meeting in Cheyenne in July 2007. Other local city and county agency meetings were held in Laramie, Rawlins, Casper, Glenrock, and Douglas in July and August 2007 in Albany, Carbon, Natrona, and Converse counties, Wyoming. The public was invited to all state and local agency meetings.

The Project was developed prior to any issuance of guidance documents and before eagle risk data was publicly available. Throughout Project development, Applicant evaluated and adopted conservation measures into the infrastructure layout and design, construction/clean-up, operations, and decommissioning/restoration plans for the Project to avoid and minimize impacts to eagles. The location of a Project-related transmission line was selected to concentrate impacts within an existing roadway, railroad, and power line corridor.

### 1.4.1 Tribal Coordination

The Service currently manages bald and golden eagles at the Eagle Management Unit (EMU) level, which is defined as the four administrative flyways with some modifications. This Project occurs in the Central Flyway. At the time this EA is made available for the 30-day public comments period, we will contact ten native sovereign nation tribal leaders through formal letters, and other tribes potentially affected by this Project via email, to offer the opportunity for formal consultation concerning this potential federal action. The letters informed the tribal leaders and other potentially affected tribes of the receipt of the IETP application and preparation of this EA by the Service.

Coordination with tribal governments is an ongoing process. If the Service issues a 30-year IETP to the Applicant and the Applicant chooses to apply for a new permit when the IETP expires, the tribes will again be notified and offered the opportunity for consultation.

## **2. Proposed Action and Alternatives**

### 2.1 Proposed Action

We propose to issue a 30-year IETP to take up to 1.43 bald eagles and up to 10.86 golden eagles annually (for a total authorized take of up to 43 bald eagles and up to 326 golden eagles over the life of the 30-year permit) with associated conditions, as allowed by regulation. The Applicant will implement all measures required by other agencies and jurisdictions to conduct the activity at this site including Applicant-committed measures, the conservation commitments described in the Applicant's ECP and Avoidance and Minimization, Compensatory Mitigation, Post Construction Monitoring, and Adaptive Management.

**Compensatory Mitigation** - The Applicant has committed, and will be required, to fully offset the authorized take of golden eagles, after the April 2009 environmental baseline cutoff date as discussed in the 2016 PEIS, by implementing compensatory mitigation as part of the conditions of the IETP. Specifically, this potential golden eagle take is related to the re-power construction after the Project became operational. Compensatory mitigation for this Project will consist of retrofitting high-risk power poles proportional to the predicted and adjusted golden eagle take estimate calculated by the Service, and will be located in the Central Flyway EMU. Together, these conservation and mitigation measures aim to ensure there will be no significant impacts to golden eagle populations. Compensatory mitigation must be additional or additive and is calculated using the Service's Resource Equivalency Analysis (REA) model for eagles, as outlined in the Eagle Conservation Plan Guidance Module 1-Land-based Wind Energy Version 2 (USFWS 2013).

Compensatory mitigation will be completed for the 30-year permit period by retrofitting up to 867 high-risk power poles to reduce eagle mortality. Retrofitting refers to installing eagle-safe perches, installing perching deterrents, and insulating electrified phases. The number of retrofits

was derived using our REA based on the estimated annual golden eagle mortalities. The Applicant's commitment to retrofit power poles to meet or exceed the Avian Power Line Interaction Committee's (APLIC) recommendations would minimize the risk of bird electrocution and collision (APLIC 2012) on the retrofitted power poles.

If the estimated take is less than mitigated take at the end of the 30-year period, the excess take will be credited to the Project if the operators apply for and receive an IETP for future Project operations. If take is higher, increased mitigation will be required. In either case, compensatory mitigation for any potential subsequent IETP would be re-evaluated based on actual take levels observed/estimated at the Project as compared with permitted levels of take. The re-evaluation will be subject to current regulations in place at the time of the renewal.

**Post Construction Monitoring** - The Applicant will conduct Post Construction Mortality Monitoring (PCMM) for all years of the permit including an intensive monitoring effort for the first two full years after the IETP is issued, as part of the condition(s) of approval. This data will be used to verify that take limits are not being exceeded, to update take estimates, and to evaluate the overall eagle mortality as related to meeting the objectives of Adaptive Management. This monitoring also includes searcher efficiency trials (to estimate rates of observer bias) and carcass persistence trials (to better understand carcass persistence on the landscape). These trials are designed to address uncertainty and to develop robust estimates of mortality at the Project site. Fatality estimates would be updated to reflect project-specific conditions and compensatory mitigation would be adjusted accordingly. Annual monitoring reports will be prepared within three months of completing each year of post-construction monitoring required by the IETP, with each report including all raw monitoring data upon which the reports are based and cumulative results of post-construction monitoring performed to date. All monitoring reports shall document annual fatalities for eagles, other birds, and bats on a per-turbine basis. Additionally, any bald or golden eagle found dead or injured must be reported to the Migratory Bird Permit Office within 24 hours of discovery. Eagle remains will be handled and processed according to current Service procedures. All post construction monitoring will be conducted on existing disturbance, using existing roads, and conducted on foot.

**Adaptive Management**—The Applicant has developed an Adaptive Management Plan to monitor for impacts and avoid, minimize, and mitigate impacts to eagles and other avian species based on the Project specifics and data available (Section 9.8 of the ECP). The stepwise process identified in the ECP will be used to guide the implementation of additional conservation measures as needed, and applies before actual take exceeds the permitted take levels.

## 2.2 Alternative 1: No Action

Under the no action alternative, we would take no further action on the IETP application. In reality, the Service must take action on the IETP application, determining whether to deny or issue the permit. We consider this alternative because regulations require evaluation of a no action alternative, and it provides a clear comparison of any potential effects to the human environment from the proposed action.

The no action alternative in this context analyzes predictable outcomes of the Service not issuing an IETP. Under the no action alternative, the Project would likely continue to operate without an IETP being issued. Thus, for purposes of analyzing the no action alternative, we assume that the applicant will continue to implement all measures required by other agencies and jurisdictions to operate the Project, but the conservation measures proposed in the IETP application package (that have not already been implemented by the Applicant) would not be required.

As outlined by the MBCP per court Plea Agreement, the Applicant would continue to offset any observed golden eagle fatalities by retrofitting at a rate of 9.26 poles per each golden eagle fatality related to the existing Project. No post-construction eagle mortality monitoring would occur, and no additional data would be available to the Service to contribute to the overall refining efforts of the Collision Risk Model (CRM).

The Applicant may choose to implement some, none, or all of those conservation and adaptive management measures. Under this alternative, we assume that the Applicant will take some reasonable steps to avoid taking eagles, but the Applicant would be liable for violating the Eagle Act should take of an eagle occur after December 2024.

## 2.3 Other Alternatives Considered but Not Evaluated in this Environmental Assessment

### 2.3.1 Alternative 2: Deny Permit

Under this alternative, the Service would deny the permit application, and not issue an IETP because the Applicant falls under one of the disqualifying factors and circumstances denoted in 50 C.F.R. § 13.21; the application fails to meet all regulatory permit issuance criteria and required determinations listed in 50 C.F.R § 22.26; or because the Service determines that the risk to eagles is so low that a take permit is unnecessary for the Project.

Our permit issuance regulations at 50 C.F.R. § 13.21(b) & (c) set forth a variety of circumstances that disqualify an Applicant from obtaining a permit (e.g., a conviction, or entry of a plea of guilty or *nolo contendere*, for a felony violation of the Lacey Act, the Migratory Bird Treaty Act, or the Eagle Act disqualifies any such person from receiving or exercising the privileges of a permit). The Applicant does not meet any of the disqualifying factors or circumstances denoted in 50 C.F.R. § 13.21. We next considered whether the Applicant meets all issuance criteria for the type of permit being issued. For eagle take permits, those issuance criteria are found in 50 C.F.R § 22.26(f) in the 2009 regulations (74 FR 46878, Sept. 11, 2009). The Project application meets all the regulatory issuance criteria and required determinations (50 C.F.R. § 22.26) for permits.

When an applicant for a permit is not disqualified under 50 C.F.R. § 13.21 and meets all the issuance criteria of 50 C.F.R. § 22.26, denial of the permit is not a reasonable option. Therefore, this alternative—denial of the permit—was eliminated from further consideration.

### 3. Affected Environment

This section describes the current status of the environmental resources and values that are affected by the proposed action and no action alternative. It is important to note that the Project was built and operational prior to the release of the Service's *Land-Based Wind Energy Guidelines* (Service 2012) and *Eagle Conservation Plan Guidance Module 1 – Land-based Wind Energy* (Service 2013). These documents provide recommendations and guidelines for preconstruction surveys and methodologies not followed at the Project. The ECP was prepared, and consultation with the Service was completed with general consideration of the recommendations and guidance provided in these documents.

#### Current and Past Adaptive Management

The Applicant has worked through the Project adaptive management plan and implemented a number of actions during the Project operation phase. The Applicant evaluated and conducted a number of habitat modification actions in an effort to reduce eagle attraction to the Project area. These actions were implemented in response to field observations as related to eagle activities considered to indirectly increase the risk of eagle mortality. Specifically, the Applicant removed 168 rock piles, thought to be associated with concentration of eagle prey species, from the Project area. These rock structures were artificial remnants left over from the mine reclamation activities. Additionally, trees that were planted as part of the mine reclamation were removed when in proximity to the wind turbines, in order to eliminate potential eagle perch and future nesting structures.

The Applicant has implemented a curtailment of wind turbines as part of their adaptive management strategy. During active curtailment monitoring periods, a biomonitor actively surveyed for eagles and shut down wind turbines when an eagle was deemed at risk. Two curtailment phases have occurred (or are ongoing) at the Project: experimental and informed. Additional information regarding curtailment is available in the Applicant's ECP (Attachment A pp. 86).

#### Pre-construction Surveys

Fixed-point avian use surveys were conducted at twelve plots across the Project area in the spring (April 18 – June 9, 2007) and the fall (September 19 – November 14, 2007) seasons. One hundred eighty-six, 20-minute fixed points were completed and no bald eagles were observed during the scheduled searches; however, one bald eagle was incidentally observed. Golden eagles were observed and are further discussed in the section 3.2 (Golden Eagle).

In the spring of 2007, throughout the proposed Project area with a one-mile buffer and within a one-mile buffer of the proposed transmission line, raptor nest surveys were conducted following the survey methods detailed in the ECP. Additionally, comprehensive ground surveys were completed by visually inspecting areas of suitable habitat (e.g., trees in proximity to large

waterbodies). During those surveys, no bald eagle nests were located. Golden eagle nests were observed and are further discussed in the section 3.2 (Golden Eagle).

### Post-construction Surveys

Multiple post-construction monitoring studies have been conducted since the Project went operational including: 1) a standard three year post-construction monitoring (PCM) study (May 2009 – May 2012) which included an eagle-specific monitoring segment at the request of USFWS (May 2010 – April 2011); 2) an informal monitoring effort (June 2012 – May 2013); 3) eagle specific bi-monthly searches at original PCM turbines (July 2013 – December 2015); and 4) eagle-specific monthly searches at all Project turbines (January 2016 – present). Additionally, three years (May 2009 to May 2012) of post-construction monitoring studies were conducted at the Project to assess the level of avian mortalities, discussed in more detail below. These surveys included monitoring for eagle mortalities.

Raptor (including bald and golden eagle) nest searches and subsequent surveys were conducted from 2011-2013 in the Project area. Additional buffer area of two-mile and 2.5-mile buffer, where access was granted on private lands, was surveyed in 2012 and 2013 respectively. During those surveys, no bald eagle nests were located. Golden eagle nests were observed and are further discussed in the section 3.2 (Golden Eagle).

#### 3.1 Bald Eagle

General information on the taxonomy, ecology, distribution, and population trends of bald eagles is given in Section 3.2.1 of the PEIS (Service 2016a, pages 44-60) and is incorporated herein by reference. The rest of this section focuses on bald eagle occurrences in the EMU in which the Project occurs (Central Flyway), the local area population (LAP; within 86 miles of the Project), and the Project area (the actual footprint of the Project and an associated one-mile buffer for pre-construction surveys and an associated 2- to 2.5-mile buffer for post-construction surveys). The estimated median population size of bald eagles in the Central Flyway EMU is 3,209 (Service 2016b). Based on the Service's process to calculate the LAP, the population size in the LAP is estimated to be 51 bald eagles.

A total of 186, 20 minute fixed-point avian surveys were conducted as part of the pre-construction surveys of the Project area, spanning April 2007 through November 2007. No bald eagle observations were recorded during the survey period. No bald eagle nests were recorded in the Project area. Bald eagle nesting habitat (e.g., trees in proximity to large waterbodies) is not present in the Project and foraging habitat is limited. No communal bald eagle roosts or habitat for such roosts exist in the Project area, although the BLM has documented bald eagle winter roosts in the region, including along the North Platte River located about 10 miles south of the Project and on Casper Mountain located approximately 25 miles southwest of the Project. No known communal roosts have been identified within the Project area. There are no known prey

concentration areas in the Project area. Detailed pre-construction survey information can be found in the ECP.

Post-construction monitoring to assess eagle mortality was conducted for three years (2009-2012) after the Project became operational. This approach used a systematic methodology to monitor approximately 34 percent of the total turbines in the Project area. Additional post-construction monitoring (ongoing) started in 2012 and continues presently. No bald eagles were found during standardized carcass surveys or incidentally on plots not included in the search during the 2009-2012 PCM.

PCM to assess avian mortality and raptor nesting activity began with a standard 3-year carcass monitoring study from 2009 – 2012 (Johnson et al. 2010, 2011, 2012) and continued with post-agreement monitoring from 2012 – present. From May 20, 2009 – May 19, 2010 (Year 1), zero bald eagle carcasses were found during standardized carcass surveys of 54 of the Project's 158 turbines and seven MET towers (Johnson et al. 2010). The objective of the standardized carcasses surveys was to systematically search wind turbines and MET towers for bird and bat casualties that were attributable to collision with Project facilities. In addition, raptor nest surveys conducted within the Project footprint as well as a one-mile buffer around the Project during May 2010 did not document bald eagle nests (Johnson et al. 2010). During standardized carcass surveys of 54 of the Project's 158 turbines from May 24, 2010 – May 26, 2011 (Year 2), no bald eagles were documented. Raptor nest surveys conducted within the Project footprint as well as a one-mile buffer around the Project during 2011 did not document bald eagle nests (Johnson et al. 2011). Finally, from May 31, 2011 – May 11, 2012 (Year 3), standardized carcass surveys of 54 of the Project's 158 turbines documented zero bald eagles (Johnson et al. 2012). Raptor nest surveys conducted within the Project footprint as well as a 2-mile buffer around the Project during 2011 did not document bald eagle nests (Johnson et al. 2012). In addition, searcher efficiency trials were completed simultaneous to yearly carcass surveys. Searcher efficiency trials estimated the percentage of casualties found by observers. Estimates of searcher efficiency were used to adjust the total number of carcasses found for those missed by observers, correcting for detection bias.

### Ongoing Monitoring

Ongoing mortality monitoring was initiated in June 2012, after the three-year initial PCM study was completed, and continues in the present. The applicant collaborated with the Service on mortality monitoring methodology starting July 2013 through the present. Multiple survey methods have been incorporated into the ongoing monitoring including both formal and informal efforts consisting of standardized and opportunistic surveys, and searcher efficiency evaluation. Three distinct surveys methodologies were utilized during the three time periods and these, along with the results, are discussed in more detail below.

The June 2012 – May 2013 effort focused on surveying 51 turbines using pedestrian transect method within a plot area focused around the turbine tower. Surveys were conducted once and



twice per month. Additionally, the remaining turbines were visited opportunistically using the vehicle “drive-by” method. This monitoring effort is considered “informal” since no formal coordination occurred with the Service during this period.

The July 2013 – December 2015 effort focused on surveying 54 turbines using pedestrian transect method focusing around the turbine tower, for a total of 3,081 plot searches. Surveys were conducted once and twice per month and included searcher efficiency trials. Additionally, the remaining turbines were visited opportunistically using the vehicle “drive-by” method. No bald eagle mortalities were discovered in this time period and using the method referenced above, however, one dead bald eagle was discovered incidentally at a non-search turbine. Of the 63 trial turkey decoys placed during the monitoring period, 73% were discovered by field staff conducting activities onsite (e.g., fatality searches, turbine curtailment, raptor nest surveys). This included 65.7% of the trial decoys placed at non-searched turbines and 85.7% of the trial decoys placed at searched turbines.

The January 2016 – present effort focused on surveying all turbines using pedestrian transect method focusing around the turbine tower, for a total of 10,088 plot searches. Surveys were conducted once and twice per month and included searcher efficiency trials using turkey decoys. No bald eagle mortalities were discovered. Approximately 77% of the trial decoys were discovered during search efforts. Twenty-six trial decoys were determined to be unavailable.

### 3.2 Golden Eagle

General information on the taxonomy, ecology, distribution, and population trends of golden eagles are given in Section 3.3.1 of the PEIS (Service 2016a, pages 71-81) and is incorporated herein by reference. The rest of this section focuses on golden eagle occurrences in the EMU in which the Project occurs (Central Flyway), the LAP (within 109 miles of the Project; see Figure 2), and the Project Area (the actual footprint of the Project and an associated 1-mile buffer for pre-construction surveys and an associated 2- to 2.5-mile buffer for post-construction surveys). The estimated median population size of golden eagles in the Central Flyway EMU is 15,327 (Service 2016b). Based on the Service’s process to calculate the LAP, the population size in the LAP is estimated to be 1,538 golden eagles.

A total of 186, 20 minute fixed-point surveys were conducted as part of the pre-construction surveys of the Project area, spanning April 2007 through November 2007 and yielding 97 observations (in 88 groups). Golden eagles were observed in all age classes including juvenile, sub-adult, and adult. In the Project area, golden eagle observations were documented in each month of the surveys. Additionally, comprehensive ground surveys were completed by visually inspecting areas of suitable habitat (e.g., trees, rock outcrops). Survey efforts recorded four active golden eagle nests with an incubating adult within one-mile of the Project boundary (Johnson et al. 2008). Three of the nests were located on artificial eagle nest platforms within the Project boundary. The Applicant worked with the Service to relocate the three artificial eagle nest platforms from the middle of the proposed Project area to a location 10-mile south of the Project. No known communal roosts have been identified within the Project area. There are no

known prey concentration areas in the Project area. Detailed pre-construction survey information can be found in the ECP.

Post-construction monitoring to assess eagle mortality was conducted for three years (2009-2012) after the Project became operational. This approach used a systematic methodology to monitor approximately 34 percent of total turbines in the Project area. Additional post-construction monitoring started in 2012 and continues presently. Two golden eagle carcasses were found during standardized carcass surveys and three golden eagle carcasses were found incidentally on plots not included in the search.

In addition to monitoring mortality associated with turbines, eagle nest surveys were conducted within the Project footprint as well as a two-mile buffer around the Project for three years (2010-2012) after the Project became operational. Nest surveys were ground-based in years 2010 and 2011, and ground and aerial-based in 2012. Nest surveys specifically targeted previously identified nests; however, efforts were made to locate additional nests in suitable habitat (e.g., rocky outcrops/cliffs, trees, etc.). In 2013, the Project area and a 2.5-mile buffer were surveyed, again using both aerial and ground surveys. Initial occupation surveys were completed regularly throughout April using ground surveys. Once eagle nests were identified, a subsequent survey effort followed annually spanning years 2014-2019. These surveys were conducted to identify eagle nests and to track eagle nest activity throughout the breeding season, and how those factors relate to eagle nest success.

Eleven different eagle nests were identified as occupied from 2010 – 2019. The greatest number of occupied nests identified in any one year was ten in 2016. Seven of the ten nests produced offspring, suggesting as many as seven different nesting territories existed around the Project. Occupied nest numbers have fluctuated between four and ten since implementing the rigorous and standardized survey protocol (2014 – 2019). Additionally, six golden eagle chicks were banded in 2011 and 2012. Annual eagle nest monitoring was conducted in 2020 and will be conducted as required by an issued permit or based on coordination with the USFWS in the future.

### Ongoing Monitoring

Ongoing mortality monitoring was initiated in June 2012, after the three-year initial PCM study was completed, and continues in the present. The applicant collaborated with the Service on mortality monitoring methodology starting July 2013 through the present. Multiple survey methods have been incorporated into the ongoing monitoring including both formal and informal efforts consisting of standardized and opportunistic surveys, and searcher efficiency evaluation. Three distinct surveys methodologies were utilized during the three time periods and these, along with the results, are discussed in more detail below.

The June 2012 – May 2013 effort focused on surveying 51 turbines using pedestrian transect method within a plot area focused around the turbine tower. Surveys were conducted once and

twice per month. Additionally, the remaining turbines were visited opportunistically using the vehicle “drive-by” method. This monitoring effort is considered “informal” since no formal coordination occurred with the Service during this period. Four dead golden eagles were discovered in this time period; however only one eagle was discovered using the method referenced above.

The July 2013 – December 2015 effort focused on surveying 54 turbines using pedestrian transect method focusing around the turbine tower, for a total of 3,081 plot searches. Surveys were conducted once and twice per month and included searcher efficiency trials. Additionally, the remaining turbines were visited opportunistically using the vehicle “drive-by” method. Seven golden eagle mortalities were discovered in this time period. One detection was found during standardized searches at search turbines, one detection was found incidentally at a search turbine, two detections were found during a scheduled turbine search at an adjacent non-search turbine, one detection was found during an eagle scan at a non-search turbine, and two detections were found incidentally at non-search turbines. Of the 63 trial turkey decoys placed during the monitoring period, 73% were discovered by field staff conducting activities onsite (e.g., fatality searches, turbine curtailment, raptor nest surveys). This included 65.7% of the trial decoys placed at non-searched turbines and 85.7% of the trial decoys placed at searched turbines.

The January 2016 – present effort focused on surveying all turbines using pedestrian transect method focusing around the turbine tower, for a total of 10,088 plot searches. Surveys were conducted once and twice per month and included searcher efficiency trials using turkey decoys. Thirteen golden eagle mortalities were discovered. Ten eagle mortalities were found during scheduled turbine plot searches while five were found incidentally. Approximately 77% of the trial decoys were discovered during search efforts. Twenty-six trial decoys were determined to be unavailable.

### 3.2.1 Migratory Birds

General information on migratory birds protected under the Migratory Bird Treaty Act (MBTA) is discussed in Section 3.5.1 of the PEIS (Service 2016a, 97-98) and is incorporated by reference herein. Species most likely affected by our permit decision evaluated for this Project are those that might benefit from the mitigation options developed in the ECP, primarily power pole retrofits that protect birds from electrocution. The Applicant entered into a Plea Agreement with the Department of Justice and the Service in December 2014. As part of the Plea Agreement, a MBCP was developed to provide a framework for the Applicant to implement measures that will ensure compliance with the requirements of the MBTA and Eagle Act during the term of the MBCP. A brief summary of the actions required under the MBCP can be found in section 1.1 of the ECP.

### 3.2.2 Pre-construction Surveys for Migratory Birds

The Applicant’s ECP describes pre-construction avian survey methods and results; incorporated by reference is a summary of avian use results. One hundred eighty-six, 20-minute fixed-point

surveys were conducted in spring and fall of 2007 prior to Project construction. Twenty-six bird species were identified. One hundred eighty-eight individual raptors were recorded within the wind resource area, representing nine species. No waterbirds were observed. Shorebirds were only observed in spring (0.01 bird/plot/20-minute survey). Raptor use was highest during the fall (1.09) and lowest during the spring (1.08). The most common raptors observed were golden eagle and northern harrier (*Circus hudsonius*). Golden eagles composed approximately 8.1% of all observations and had the highest overall use of all raptor species observed in both seasons. Golden eagles had the highest recorded use in the northern end of the Project. Upland gamebirds were recorded only during the fall (0.12), while doves/pigeons were recorded only the spring (0.22). Passerine use ranged from 2.87 in spring to 6.77 in fall.

### 3.2.3 Post-construction Surveys for Migratory Birds

Over the three years of post-construction fatality monitoring (2009 – 2012) at the Project, collision mortality of all bird species combined at the Project was determined to be low and raptors were determined to be low, compared to other wind energy facilities. The number of raptor fatalities/turbine/year ranged from 0.03 to 0.06/MW/year over the 3-year study, and averaged 0.05 (Johnson et al. 2012 in Attachment A). The estimated annual mortality rate at turbines ranged from 0.08 to 13.93 fatalities/MW/year, and averaged 1.27 birds/MW/year over the 3-year study.

### 3.4 Species listed under the Endangered Species Act

The Endangered Species Act (ESA) directs the Service to identify and protect endangered and threatened species and their critical habitat, and to provide a means to conserve their ecosystems. The ESA requires specifically that [the], "... Federal agency shall... insure that any action authorized, funded, or carried out by such agency ... is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat of such species..." (16 U.S.C. 1536 (a)(2)). Because issuance of an IETP is a Federal Agency action, the ESA is applicable and addressed in this EA.

Six species listed as federally endangered or threatened under the ESA may occur in the Project area. These species include Ute ladies'-tresses (*Spiranthes diluvialis*), and five Platte river species: least tern (*Sternula antillarum*), piping plover (*Charadrius melodus*), whooping crane (*Grus americana*), pallid sturgeon (*Scaphirhynchus albus*), and western prairie fringed orchid (*Platanthera praeclara*).

On May 8, 2020, the Service initiated an intra-service Section-7 consultation for the issuance of an IETP for the Project (Attachment B). It was determined that the Project will have "no effect" on six federally listed species: Ute ladies'-tresses, and five Platte river species: least tern, piping plover, whooping crane, pallid sturgeon, and western prairie fringed orchid. The Service's Wyoming Field Office reviewed the Intra-Service Section-7 Biological Evaluation Form and concurrence was transmitted to the Regional Migratory Birds Office on September 17, 2020. Our decision regarding the IETP will not alter the physical footprint of the Project and will not alter

its impacts to federally threatened and endangered species; therefore, no further evaluation of impacts to species listed under the ESA is warranted for the Service's decision of whether or not to issue an IETP.

### 3.5 Cultural and Socio-economics Interests

The National Historic Preservation Act (NHPA) is the principal federal law guiding federal actions with respect to the treatment of cultural, archaeological, and historic resources. Section 106 (54 U.S.C. § 306108) of the NHPA requires federal agencies, prior to taking action to implement an undertaking, to take into account the effects of their undertaking on historic properties and to give the Advisory Council on Historic Preservation (ACHP) and the State Historic Preservation Office (SHPO) a reasonable opportunity to comment regarding the undertaking. Historic properties are "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on, the National Register..." of Historic Places [NRHP] (54 U.S.C. § 300308). The criteria used to evaluate the NRHP eligibility of properties affected by federal agency undertakings are contained in 36 CFR § 60.4.

No new ground-disturbing activities will occur as part of or related to issuing an IETP. The existing Project was constructed on lands reclaimed from previous open-pit mining operation.

Eagles can be considered a feature or element of a Traditional Cultural Property under the NHPA. 74 Fed. Reg. 46844 (Sept. 11, 2009). Resources or issues of interest to the Tribes that could have a bearing on their traditional use and/or religious freedom include eagles (e.g., ceremonial use of eagle feathers). The Religious Freedom Restoration Act of 1993 ensures that interests in religious freedom are protected. In addition, some Tribes and tribal members may consider eagle nests sacred sites (or traditional cultural properties) or potential historic properties of religious and cultural importance, as provided for in the American Indian Religious Freedom Act. Section 1.6.1 describes our effort to coordinate with tribal governments to ensure tribes are given the opportunity to consult with us on matters related to potential issuance of an IETP for this Project.

### 3.6 Climate Change

Climate change was considered in the PEIS (Service 2016; Section 3.9, page 144) and is incorporated herein by reference. The proposed action, of issuing a permit, will have no direct impact on Climate Change. The project is existing and currently operational. It will likely continue to operate regardless of the decision whether or not to issue an IETP.

## **4. Environmental Consequences**

This section summarizes the effects on the environment of implementing the proposed action and the no action alternative. The discussion of overall effects of the IETP program is provided in the

PEIS (Service 2016) and is incorporated by reference here. This section of this EA analyzes only the effects that may result from the issuance of an IETP for this specific Project.

#### 4.1 Proposed Action

In determining the significance of effects of the Project on eagles, we screened the proposed action against the analysis provided in the PEIS (Service 2016) and the Service's 2016 report, "Bald and Golden Eagles: Status, trends, and estimation of sustainable take rates in the United States." We also used our eagle-risk analysis (Service 2013, Appendix D), and Cumulative Effects Analysis (Service 2013, Appendix F) to quantify eagle fatality risk and cumulative local area population level effects.

The proposed action is consistent with 50 C.F.R. § 22.26(a) Purpose and scope, where the "permit authorizes take of bald and golden eagles where the take is compatible with preservation of the bald and golden eagle; is necessary to protect an interest in a particular locality; is associated with, but not the purpose of, the activity; and cannot practicably be avoided." Additionally, under the court Plea Agreement, the Applicant is required to actively pursue an IETP.

##### 4.1.1 Estimating Eagle Fatalities

We used Evidence of Absence (EOA; Dalthorp et al. 2017) to analyze the post-construction mortality monitoring data collected on the project site from 2016 –2019 and used the resulting expected value to update the Service's CRM. We used the "Single Class" module to yield an expected value for each model year and then updated the CRM iteratively, to account for adjusted operational daylight hours which varied annually, and then derived an annual fatality estimate that could be expected during future years of project operations under the assumption that the project would not exceed 2,923.09 operational daylight hours per turbine per year. Under current Service policy, projects that conduct robust post-construction mortality monitoring are eligible to be permitted at the mean annual estimate for both bald eagles and golden eagles, therefore all fatality estimates presented in this document represent the mean annual fatality estimates for each species.

##### 4.1.2 Estimating Golden Eagle Take

Under the proposed action, we estimate that 10.86 golden eagles could be taken annually. This number is multiplied by the number of years in the permit term (30) and rounded up to the next whole number (for a total authorized take of up to 326 golden eagles over the life of the 30-year permit). Eagle-specific post-construction monitoring is required for the IETP and is included as a permit condition. The required post-construction fatality monitoring also includes searcher efficiency trials and carcass persistence trials designed for the purpose of addressing uncertainty and for developing robust estimates of mortality at the project site. This project-specific, robust estimate of mortality is then used for the purpose of updating our eagle-risk analysis, to yield a refined estimate of mortality for the Project. Monitoring is a critical component of adaptive

management. The proposed conservation measures include adaptive management that could result in additional monitoring and operational adjustments. Adaptive management measures will be implemented based on the stepwise process identified in the adaptive management framework; will be used to guide the implementation of additional conservation measures as needed; and apply before actual take exceeds the permitted take levels. To fully offset the authorized take, the Applicant will commit to retrofitting high-risk power poles proportional to the predicted and adjusted eagle take estimate, calculated by the Service, as compensatory mitigation for the loss of golden eagles. Together, these conservation and mitigation measures aim to ensure there will be no significant impacts to golden eagle populations.

#### 4.1.3 Estimated Bald Eagle Take

Under the proposed action, we estimate that up to 1.43 bald eagles could be taken annually. This number is multiplied by the number of years in the permit term (30) and rounded up to the next whole number (for a total authorized take of up to 43 bald eagles over the life of the 30-year permit). Eagle-specific post-construction monitoring is required for an IETP and is included as a permit condition. The required post-construction fatality monitoring also includes searcher efficiency trials and carcass persistence trials designed for the purpose of addressing uncertainty and for developing robust estimates of mortality at the Project site. This project-specific robust estimate of mortality is then used for the purpose of updating our eagle-risk analysis, to yield a refined estimate of mortality for the Project. Monitoring is a critical component of adaptive management. The proposed conservation measures include adaptive management that could result in additional monitoring and operational adjustments. Adaptive management measures will be implemented based on the stepwise process identified in the adaptive management framework; will be used to guide the implementation of additional conservation measures as needed; and apply before actual take exceeds the permitted take levels. Together, these conservation measures ensure there will be no significant impacts to bald eagle populations. The annual take of bald eagles that would be authorized by this permit does not exceed the EMU take limit; therefore, compensatory mitigation for bald eagles is not required. However, compensatory mitigation required per golden eagle take offset will likely benefit bald eagles by retrofitting high-risk power poles and alleviating the risk of electrocution associated with those structures, and will be located in the Central Flyway EMU. The actual location of the compensatory mitigation has not been determined; however, the Service recommends that the Applicant implement it within the bald eagle LAP area related to the Project.

#### 4.2 Cumulative Effects

Take of eagles has the potential to affect the larger eagle population. Accordingly, the 2016 PEIS, incorporated herein by reference, analyzed the cumulative effects of permitting take of bald and golden eagles in combination with ongoing unauthorized sources of human-caused eagle mortality and other present or foreseeable future actions affecting bald and golden eagle populations. As part of the analysis, the Service determined sustainable limits for permitted take of bald eagles within each EMU. The bald eagle take that would be authorized by this permit does not exceed the EMU take limit for bald eagles, so it will not significantly impact the EMU



bald eagle population. Take limits for golden eagles in all EMUs are set to zero; therefore, all permits for golden eagles take must incorporate offsetting compensatory mitigation after all appropriate and practicable avoidance and minimization measures are employed. Golden eagle take being considered under this application would require mitigation, described in further detail below. The avoidance and minimization measures and mitigation for golden eagles that would be required under the permit, along with the additional adaptive management measures, are designed to further ensure that the permit is compatible with the preservation of bald and golden eagles at the regional EMU population scale. Additionally, to ensure that eagle populations at the local scale are not depleted by cumulative take in the local area, the Service analyzed in the 2016 PEIS the amount of take that can be authorized while still maintaining the LAP of eagles. In order to issue an IETP, cumulative authorized take should not exceed 5%, nor can cumulative unauthorized take exceed 10%, of a LAP, unless the Service can demonstrate why allowing take to exceed that limit is still compatible with the preservation of eagles. The IETP regulations require the Service to conduct an individual LAP analysis for each permit application as part of our application review.

We, therefore, considered cumulative effects to the LAP surrounding the Project to evaluate whether the take to be authorized under this permit, together with other sources of permitted take and unpermitted eagle mortality, may be incompatible with the persistence of the Project LAP. We incorporated data provided by the applicant, our data on other eagle take authorized and permitted by the Service, and other reliably documented unauthorized eagle mortalities (i.e., known eagle take at nearby wind farms, electrocution, and documented mortalities due to anthropogenic and natural causes) to estimate cumulative impacts to the LAP. The scale of our LAP analysis is an 86-mile radius around the project site for bald eagles and a 109-mile radius for golden eagles (Figure 2). We conducted our cumulative effects analysis as described in the Service's ECP Guidance (Service 2013; Appendix F).

Three permitted wind energy projects overlap this LAP for both eagle species. One of these projects Choke Cherry Sierra Madre (CCSM) is not currently built and authorized permitted take does not go into effect until 2022, when it is anticipated to become operational. The CCSM permit is a 5-year permit for take of bald and golden eagles; it expires at the end of 2023. Because permitted take of bald eagles is not currently occurring at this unbuilt project site, but we anticipate that take could occur in approximately two years, we discuss the effects of CCSM, combined with this Project, on bald and golden eagles in Section 4.2.4 (*Reasonably Foreseeable Future*).

#### 4.2.1 Bald Eagles

The LAP of bald eagles for the Project is approximately 51 eagles and the annual 1% and 5% benchmarks for this local area population are about 0.5 and 2.5 bald eagles, respectively.

Three currently permitted wind energy projects overlap this Project's LAP boundary for bald eagles. Taken together, this Project's take and the overlapping take of the other projects could

result in a total annual take of 5.3 bald eagles (or 10.36% of the LAP). The overlapping LAPs effect is discussed in more detail in the Section 4.2.4 (*Reasonably Foreseeable Future*). This is above the 5% benchmark; however, the North American Breeding Bird Survey (BBS) population trend estimate for bald eagles in Wyoming and Project LAP is 9.9% and 19%, respectively (Sauer et al. 2017; USGS-PWRC 2020). Analyses conducted by the Service showed that over most of the United States, bald eagle populations are growing at a rate of approximately 5% per year (USFWS 2016c). Additionally, a recently published report (Service 2020) estimated that bald eagle population have increased by a factor of 4.4 since 2009 across EMUs, excluding the southwestern U.S. and Alaska. Based on these results, the Service (2020) concluded that the bald eagle population has continued to increase rapidly since our previous survey.

This indicates that a take rate of approximately 11% (5% due to annual population growth plus 6% sustainable take from a stable population) would be consistent with the preservation standard in most LAPs. This and other data indicate that the bald eagle population in the LAP is likely considerably above the 2009 population level, which is the management objective specified in the 2016 PEIS (Service 2016a). The population growth in excess of 2009 population provides considerable additional capacity for take above the LAP benchmark, and our determination that a take rate in this LAP of up to 10.36% is consistent with the management objective of eagle populations.

Thus, despite the fact that take at the LAP level of 10.36% exceeds the 5% benchmark for the LAP associated with the Project, this level of bald eagle take from the local area is consistent with the management objective established in the PEIS and codified in regulations. The impacts to bald eagle populations at both the LAP and EMU scales are therefore not significant. It is reasonable to assume that bald eagles in the project vicinity are increasing and the conservative take estimate at the Project would not contribute to declines in the overall bald eagle population in the EMU.

We also documented, through an assessment of unpermitted take, that bald eagles are not experiencing atypically high levels of unpermitted mortality in this LAP. Based on the Service's eagle mortality database (which tracks sources of unpermitted take), there were 40 reported bald eagle mortalities within the LAP between 2010 and 2019, for an average of 3.2 per year. These mortalities are all considered to be unpermitted take and are largely due anthropogenic causes (e.g., electrocution, shooting, poisoning, collision with wind turbines, etc.) and less due to natural causes or undetermined. On an annual basis, 3.2 unpermitted bald eagle takes equals about 6.25% of the total estimated bald eagle population in the LAP associated with the Project. This amount of unpermitted take is well below the 10% threshold level for unpermitted take within the LAP.

#### 4.2.2 Golden Eagles

The LAP of golden eagles for the Project is approximately 1,538 eagles and the 1% and 5% benchmarks for this local area population are 15 and 77, respectively. Three currently permitted

wind energy projects overlap this Project's LAP boundary for golden eagles. Taken together, this Project's take and the overlapping take of the other projects could result in a total annual take of 21.39 golden eagles (or 1.39% of the LAP). The overlapping LAPs effect is discussed in more detail in the Section 4.2.4 (*Reasonably Foreseeable Future*). Based on the Service's eagle mortality database, there were 458 reported golden eagle mortalities within the LAP between 2010 and 2019, for an average of 15.7 per year. These mortalities are all considered to be unpermitted take and are largely due anthropogenic causes (e.g., electrocution, shooting, poisoning, collision with wind turbines, etc.) and less due to natural causes or undetermined. On an annual basis, 15.7 unpermitted golden eagle takes equals about 1.02% of the total golden eagle population in the LAP associated with the Project. This amount of unpermitted take is well below the 10% threshold level for unpermitted take within the LAP.

#### 4.2.3 Summary of Cumulative Effects on Bald and Golden Eagles

The take that would be authorized by this permit does exceed 5% of the LAP for bald eagles (see Cumulative Effects – Bald Eagle section) but does not exceed 5% of the LAP for golden eagles. The authorized take for bald eagles does not exceed the EMU level for bald eagles. As described above, the EMU take level for golden eagles is zero, therefore issuance of this permit would exceed the EMU take level. Accordingly, compensatory mitigation is required for the anticipated take of golden eagles by the Project. This take would be offset by commitments from the Applicant to retrofit high-risk power poles proportional to the predicted and adjusted eagle take estimate; therefore, the proposed action will not significantly impact golden eagle populations. See the "Mitigation and Monitoring" section below for more discussion.

#### 4.2.4 Reasonably Foreseeable Future

As described briefly above, the Service has issued three IETPs (CCSM, Pioneer Wind Park, and Dunlap Wind Energy) for the take of bald and golden eagles that overlap the Project's LAP boundaries.

CCSM, is expected to become operational (in part) in approximately two years (in 2022) and the initial permit expires at the end of 2023. Take of eagles at CCSM is not authorized prior to 2022 due to operations of the project. Because this project is not yet built nor operational, but we anticipate that take could occur in the reasonably foreseeable future (beginning in 2022), here we describe the anticipated cumulative effects of CCSM and the two other projects on this Project as potentially affecting bald and golden eagles in the LAP. For bald eagles, Pioneer Wind Park (PWP) LAP and the Project's LAP overlap by 80.5% for an overlapping take of 0.16 eagles annually. The Dunlap Wind Energy Project (DWEP) LAP and the Project's LAP overlap by 46.67% for an overlapping take of 3.1 eagles annually. The CCSM LAP and the Project's LAP overlap by 20.19% for an overlapping take of 0.61% eagles annually. Combined with authorized take for all overlapping Project LAP the estimated take could be up to 5.3 golden eagles per year beginning in 2022, or 10.36% of the LAP. This is above the 5% benchmark; however, the BBS population trend estimate for bald eagles in Wyoming and the Project LAP is 9.9% and 19% respectively (Sauer et al. 2017; USGS-PWRC 2020). Analyses conducted by the Service showed

that over most of the United States, bald eagle populations are growing at a rate of approximately 5% per year (USFWS 2016). This indicates that a take rate of approximately 11% (5% due to annual population growth plus 6% sustainable take from a stable) would be consistent with the preservation standard in most LAP's. Thus, in situations where the 5% LAP take threshold is exceeded, in most cases across the United States, the "harder look" called for in the 2016 Eagle Rule revision (Federal Register 81; 91494, 2016) will reveal that higher levels of bald eagle take from the local area are sustainable and consistent with the management objective established in the PEIS (USFWS 2016a) and Eagle Rule revision (Federal Register 81; 91494 (2016)).

For golden eagles, Pioneer Wind Park LAP and the Project's LAP overlap by 84.65% for an overlapping take of 0.85 eagles annually. The DWEP is currently operational and pending issuance of an IETP. The DWEP LAP and the Project's LAP overlap by 57.11% for an overlapping take of 3.79 eagles annually. The CCSM LAP and the Project's LAP overlap by 32.7% for an overlapping take of 5.88 eagles annually. Combined with authorized take for all overlapping Project LAP the estimated take could be up to 21.38 golden eagles per year beginning in 2022, or 1.39% of the LAP. Similar to this Project, take of golden eagles at CCSM, PWP, and DWEP will be offset by compensatory mitigation (power pole retrofits). Therefore, we have determined that this level of estimated bald and golden eagle take will not significantly impact local area eagle populations.

The Service is aware of operational wind projects in the LAP that have contributed to unauthorized take of bald and golden eagles. Some of these projects are currently operating under court-approved settlement agreements and are working with the Service to pursue and possibly attain an IETP. This known unauthorized bald and golden eagle take is included in our unpermitted take analysis and therefore accounted for in our cumulative effects analysis. Even with those impacts, the EMU take limits are not expected to be exceeded, as demonstrated by accounting for this unauthorized take in these analyses. While additional future wind developments and other activities may further increase take in the LAP during the permit tenure, the Service cannot reasonably predict the resulting impacts to eagles of such projects when important aspects of the projects (size, location, configuration, and lifespan) are currently unknown. There is no reasonable basis to consider such speculative impacts in this EA.

#### Cumulative Effects of Alternative 1 – No Action

#### 4.3 Alternative 1 – No Action

Even though we would take no action on the permit application under the no action alternative, the project would likely continue to operate without authorization for take of eagles. The Project is currently operating under a District Court Plea Agreement, which states that as long as the Applicant continues to implement the MBCP and diligently pursues obtaining an IETP, the government would extend its "non-prosecution" agreement under the Eagle Act. This agreement would remain in place until either ten years after the sentencing (2024), or the Applicant obtains an IETP which would replace the MBCP.

Because no additional measures would be required to avoid or minimize risk to eagles under this no action alternative, the risk to eagles is expected to be higher under this alternative as compared to the proposed action. Under this alternative, direct impacts of the Project on the eagle populations are anticipated to be up to 369 eagles (10.86 golden eagles and 1.43 bald eagles per year over 30 years). No adaptive management measures would be triggered should take exceed that level. None of the impacts to golden eagles would be offset by compensatory mitigation, beyond what is required in the settlement agreement as outlined in the MBCP, resulting in potential negative impacts to the golden eagle populations.

This alternative does not meet the purpose and need for the action because the Service must either issue or deny a permit if it is in receipt of a completed IETP application. 50 C.F.R. §13.21. The no action alternative also does not meet the purpose of and need for the action because it would result in the adverse, unmitigated effects to golden eagles described above, effects that are not compatible with the preservation of golden eagles.

#### 4.4 Comparison of Effects of Alternatives

The following table compares the effects of the proposed action and alternative.

	<b>Proposed Action – Issue Permit</b>	<b>Alternative 1 – No Action</b>
<b>Eagle Take Levels</b>	Up to 43 bald eagles and up to 326 golden eagles over 30 years	Up to 43 bald eagles and 326 golden eagles over 30 years
<b>Avoidance and Minimization</b>	Project is operational and will continue to operate	Project is operational and will continue to operate
<b>Compensatory Mitigation</b>	The Applicant has committed, and will be required, to retrofit high-risk power poles proportional to the predicted and adjusted eagle take estimate as compensatory mitigating, for the loss of golden eagles as a condition of approval related to the IETP	9.26 retrofits, mitigating loss of each eagle fatality, for the term of the MBCP (ending December 19, 2024).
<b>Unmitigated Eagle Take</b>	Zero	Up to 43 bald eagles and 326 golden eagles over 30 years
<b>Adaptive Management</b>	The plan is to avoid and minimize impacts to avian resources	The plan is to avoid and minimize impacts to avian resources
<b>Data Collected by Service</b>	Annual monitoring report of fatalities; reporting of injured eagles; information on the effects of specific, applied, conservation measures	None
<b>Company Liability for Eagle Take</b>	No (if in compliance with permit conditions)	No as long as covered by the duration and conditions of MBCP under Settlement

Table 1. Comparison of the Effects of the No Action and the Proposed Action Alternatives.

## **5. Mitigation and Monitoring**

### **Bald Eagles**

The proposed action incorporates measures to minimize and avoid take to the maximum degree practicable, as required by regulation. To ensure that regional eagle populations are maintained consistent with the preservation standard, our regulations require that any take that cannot practicably be avoided and is above EMU take limits must be offset by compensatory mitigation. In this case, authorized take remains below the EMU take thresholds and no compensatory mitigation is needed to meet the Eagle Act preservation standard. However, compensatory mitigation required per golden eagle take offset will likely benefit bald eagles by retrofitting high-risk power poles and alleviating the risk of electrocution associated with those structures, and will be located in the Central Flyway EMU. The actual location of the compensatory mitigation has not been determined; however, the Service recommends that the Applicant implement it within the bald eagle LAP area related to the Project.

### **Golden Eagles**

The proposed action incorporates measures to minimize and avoid take to the maximum degree practicable, as required by regulation. To ensure that regional eagle populations are maintained consistent with the preservation standard, regulations require that any golden eagle take that cannot practicably be avoided and is above EMU take limits must be offset by compensatory mitigation at a 1.2 to 1 ratio. As golden eagle take limits for all EMUs were determined to be zero (Service 2016), compensatory mitigation is necessary to offset any authorized take of golden eagles. The applicant will commit to retrofitting high-risk power poles proportional to the predicted and adjusted eagle take estimate as compensatory mitigation, for the loss of golden eagles as a condition of approval related to the IETP.

The Applicant will be required to monitor eagle fatalities using independent, third party monitors that report directly to the Service, according to protocols consistent with Service's national guidelines as outlined in the terms and conditions of the IETP. After the two-year interval, the Service will review the eagle mortality data and other pertinent information, as well as information provided by the Applicant and independent third-party monitors. The Service will assess whether the Applicant is in compliance with the terms and conditions of the permit and has implemented all applicable adaptive management measures specified in the IETP, and ensure eagle take has not exceeded the amount authorized within that time frame. We will update fatality predictions, authorized take levels and compensatory mitigation, as needed, for future years of the IETP. If authorized take levels for the period of review are exceeded in a manner or to a degree not addressed in the adaptive management conditions of the IETP, based on the observed levels of take using approved protocols for monitoring and estimating total take, the Service may require additional actions including but not limited to: adding, removing, or adjusting avoidance, minimization, or compensatory mitigation measures; modifying adaptive management conditions; modifying monitoring requirements; and suspending or revoking the IETP.



## List of Abbreviations and Acronyms

EA	Environmental Assessment
ECP	Eagle Conservation Plan
EIS	Environmental Impact Statement
IETP	Incidental Eagle Take Permit
EMU	Eagle Management Unit
ESA	Endangered Species Act
LAP	Local Area Population
MBTA	Migratory Bird Treaty Act
MBCP	Migratory Bird Compliance Plan
NEPA	National Environmental Policy Act
PEIS	Programmatic Environmental Assessment

## 6. List of Preparers

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