



U.S. Fish and Wildlife Service

# **DRAFT Environmental Assessment For the Issuance of an Incidental Eagle Take Permit for the Dunlap Wind Energy Project**

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**Wyoming**

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## 1. Introduction

This draft 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*) or golden (*Aquila chrysaetos*) eagles associated with the existing and operational Dunlap Wind Energy Project (Project), pursuant to the National Environmental Policy Act (NEPA) (42 United States Code [U.S.C.] §§ 4321–4347). Issuance of a Permit by the Service for take that is incidental to otherwise lawful activities under the Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. §§ 668–668d and 50 Code of Federal Regulations [C.F.R.] § 22.26) constitutes a discretionary Federal action that is subject to NEPA. This draft 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 draft 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 applicant, Pacific Power/Rocky Mountain Power (Applicant), is requesting Eagle Act take coverage for operational activities associated with the 111 megawatt (MW) wind farm located in Carbon County, Wyoming. The Project consists of 74 wind turbines and associated infrastructure (roads, transmission lines, etc.) and has been operational since October 2010; the expected life of the project is at least 30 years. The Applicant submitted an IETP application and Eagle Conservation Plan (ECP) to the Service on October 29, 2018, requesting the maximum 30-year permit.

Additionally, the Applicant has submitted a written notice of intent to the Service to repower the turbines currently operating at the Project. Repowering typically includes removing and replacing turbine rotors, blades, and associated parts. The Service used the new-projected turbine rotor length and design in order to predict the take of eagles as related to the Project. The repower would take place sometime in year 2020.

The Applicant is requesting an IETP for the take of up to 7 (6.6 actual estimated number) bald and 7 (6.6 actual estimated number) golden eagles annually, over the 30-year project<sup>1</sup>. This draft

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<sup>1</sup> The applicant generated a different eagle take estimate for the Dunlap Wind Project separate from our Service take estimate. This is an optional step that the Service allows applicants to do. However, in generating eagle take estimates for bald and golden eagles for the Project we used our standard Service analytical process, based on the best available science, which differs from the methods used by the applicant. The take estimates for a project

EA evaluates whether issuance of the Permit will have significant impacts on the existing human environment. “Significance” under NEPA is defined by regulation at 40 CFR § 1508.27, and requires short and long-term consideration of both the context of a proposal and its intensity.

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). Accordingly, this EA tiers from the 2016 PEIS.

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

On December 19, 2014, the Applicant pleaded guilty in U.S. District Court to two counts of misdemeanor unlawful take of migratory birds. Resulting from this were 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) and the Eagle Act. The MBCP will remain in place until it is replaced by the Permit. 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 would remain in place until either ten years after the sentencing, or the Applicant obtains an IETP which replaces the MBCP. Since 2010, when the project became operational, 11 golden eagles and 2 bald eagles have been killed to date at the Project.

### 1.1 Purpose and Need

The Service’s purpose in considering the proposed action is to fulfill our authority under the Eagle Act (16 USC §§ 668–668e) and its regulations (50 CFR, Part 22). Applicants whose otherwise lawful activities may result in take of eagles, can apply for IETP so that their projects may proceed without potential violations of the Eagle Act. The Service may issue an IETP for eagle take that is associated with, but not the purpose of, an activity. Such permits can be issued by the Service when the take that is authorized is compatible with the Eagle Act preservation standard; it is necessary to protect an interest in a particular locality; it is associated with, but not the purpose of, the activity; and it cannot be practicably avoided (50 CFR, Part 22 and Federal Register 81;91494 (2016)). The preservation standard under the Eagle Act means to be consistent

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developed by the Service are the ones that are used for our eagle incidental take permit process as established by Federal Register Notice 81: 91494 (December 16, 2016).

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 CFR, Part 22).

The need for this action is a decision on an IETP application from the Applicant. The decision must comply with the Eagle Act, all applicable regulatory requirements, and 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 CFR, 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 by reference here.

## 1.3 Background

The Project is located on 10,347 acres of Applicant-owned lands, with 640 acres owned by a private entity and 640 acres are State of Wyoming lands (Figure 1). The Project is within the “cold desert” portion of the Arid West Region (U.S. Army Corps of Engineers 2008) adjacent to the Freezeout Mountains to the northwest while transitioning into the Shirley Basin on the northeast boundary of the Project area. Thunderbasin Flats and Greasewood Flats are found to the east of the Project. Approximately one mile to the south of the Project is Pine Butte and Flattop Mountain. Within the Project area, the topographic elevation ranges from approximately 6,673 feet to 7,523 feet above sea level and is relatively flat with limited topographic relief. The most common land cover types in the Project area are shrub/scrub (big sagebrush [*Artemisia tridentata*]) and herbaceous grassland plant communities.

The Project contains 74 General Electric 1.5 megawatt (MW) wind turbine generators, all with a tower height of 262 feet secured to concrete foundations and a blade diameter of 253 feet (~77 meters), with a total output of 111 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; metrological towers; and 11 miles of 230-kilovolt transmission line connecting the Project with the PacifiCorp’s Miners to Difficulty transmission line. Construction of the Project commenced in September 2009 and operations began on October 1, 2010. Standardized post-construction monitoring and eagle nest surveys were conducted from 2011 through 2014 (Martinson et al. 2012, 2013, and 2014). Continued studies since 2014 consist of eagle nest surveys, prey habitat mapping, eagle attractant, and use assessments.

The future repower effort would consist of replacing the existing turbine rotors and blades with larger, 299-foot (91 meter) diameter rotor blades. Increasing turbine blade diameter has the

potential to increase the risk of eagle collision with the turbines. The Applicant has committed to implementing Best Management Practices (BMPs) as part of this undertaking. Those BMPs include: using the existing disturbance footprint to conduct the work related to the repower undertaking and using existing infrastructure including roads, power lines, and other facilities.

As a commitment to the protection and conservation of bald and golden eagles, the Applicant has developed an ECP for the Project (Appendix 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 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.

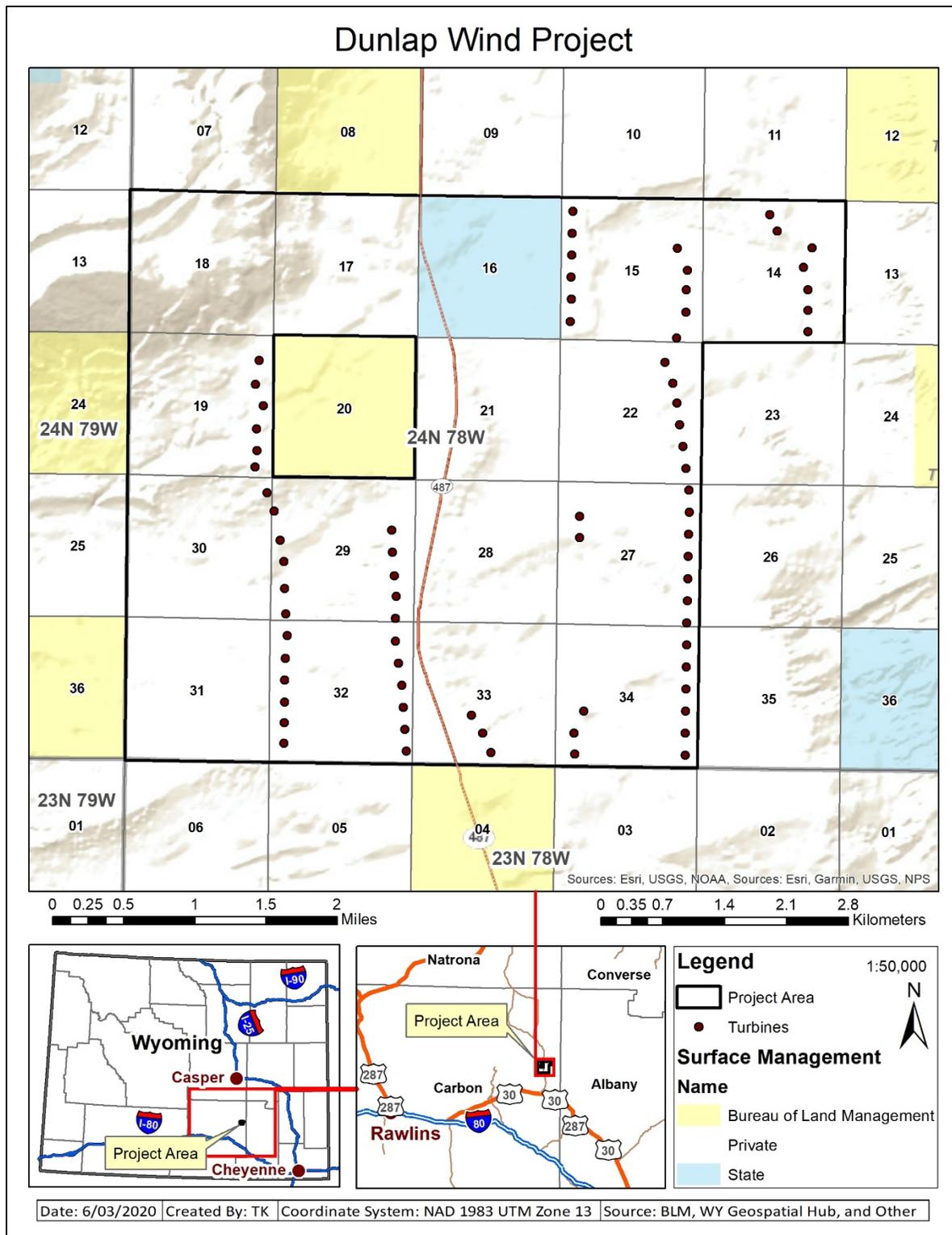


Figure 1. Dunlap Wind Energy Project Area and Turbines

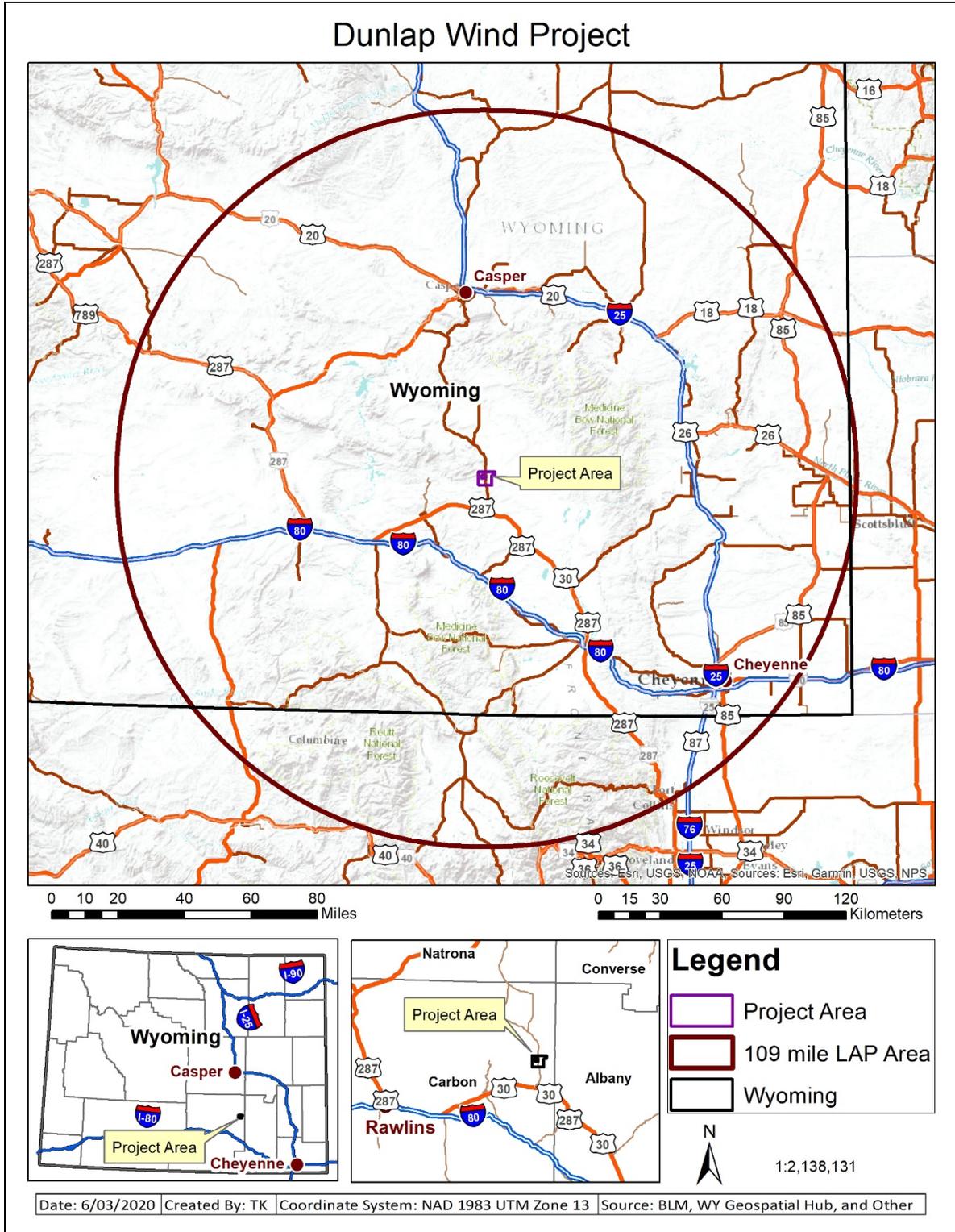


Figure 2. Dunlap Wind Project Boundary and Local Area Population (LAP) Polygon Map

## 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 2008. WGFD was also a member of the Technical Advisory Committee (TAC) established with the Service and other stakeholders for the Project in 2009. Agency communications, recommendations and involvement are described throughout the ECP and summarized in Appendices B and C of the ECP. In addition, the Applicant has applied for and received Chapter 10 (No. 1545) and Chapter 33 (No. 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 (WISC) issued a permit to the Applicant to construct and operate the Project in September 2009, after an August 2009 public hearing on the Project. As part of the ISC permit process, the Applicant met with several state, federal, and local agencies, including the Wyoming Department of Environmental Quality (WDEQ); the WGFD and the Service. The meetings were held to provide an overview of the Project and the Industrial Siting Application (ISA) process, discuss baseline data collected, address any issues and concerns (including pre- and post-construction monitoring), and answer questions. In addition, a public open house was held in Medicine Bow, Wyoming (WY) in June 2009, and town council meetings were held in June 2009 in Rock River, Rawlins, Laramie, and Sinclair, WY. Other state and county agency meetings were held in May and June 2009 in Cheyenne and in Carbon and Albany counties, WY. The public was invited to all state and local agency meetings.

### 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. We contacted 37 sovereign nations through formal letters, to offer the opportunity for formal consultation concerning this potential federal action. The letters informed them of the receipt of the IETP application and preparation of this draft EA. At the time this draft EA was prepared, the Service received two responses from contacted sovereign

nation tribes, requesting additional information. The two requests included expressing interest in the Project and requesting opportunity to discuss the Project. We sent an email response to those requests on May 26, 2020.

If the Service issues a 30-year IETP to the Applicant, and the Applicant chooses to apply for an IETP renewal when the IETP expires, the tribes will again be notified and offered the opportunity for consultation.

A second set of letters sent to the tribes announced the public availability of the draft EA and the 30-day public comment period. 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 6.6 bald eagles and up to 6.6 golden eagles annually (for a total authorized take of up to 198 bald eagles and 198 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 by implementing compensatory mitigation as part of the conditions of the IETP. 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 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 (e.g., installing eagle-safe perches, installing perching deterrents, insulating electrified phases) approximately up to 2,200 high-risk power poles to reduce eagle mortality. The number of retrofits was derived using our Resource Equivalency Analysis (Service 2013), 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 (Table 16 of the ECP).

## 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.

The project proponent 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.

## 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 IETP application, and not issue an eagle incidental take permit, 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 IETP 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.

#### 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 1-mile buffer for preconstruction 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 55 bald eagles.

A total of 113 observation hours of fixed-point avian use and opportunistic surveys were conducted as part of the pre-construction surveys of the Project area, spanning June 2008 through May 2009. Three observations were recorded as part of the combined pre-construction effort; two from fixed-point and one opportunistic. From those observations, two sightings were classified as adult eagles. Aerial raptor nest surveys were conducted in the Project area with an additional 1-mile buffer area in the spring of 2009. Additionally, comprehensive ground surveys were completed by visually inspecting areas of suitable habitat (trees, rock outcrops, etc.). During those combined surveys, no bald eagle nests were located. Bald eagle nesting habitat is not present in the Project and foraging habitat is minimal. No communal bald eagle roosts or habitat for such roosts exist in the Project area. There are no known prey concentration areas in the Project area.

Post-construction monitoring to assess eagle mortality was conducted for three years (2011-2014) after the Project became operational. This approach used a systematic methodology to monitor approximately 35 percent of the total turbines in the Project area. In the three year period, remains of one bald eagle were observed. The remains of one additional bald eagle were found during a routing visit to a turbine pad in September 2018. In addition to monitoring mortality associated with turbines, eagle nest surveys were conducted within the Project footprint as well as a 2-mile buffer around the Project for three years (2011-2014) after the Project became operational. No bald eagle nests were detected during the referenced timeframe.

## 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 1,102 golden eagles.

A total of 113 observation hours of fixed-point avian use and opportunistic surveys were conducted as part of the pre-construction surveys of the Project area, spanning June 2008 through May 2009. A total of 179 golden eagles were observed in the three year period. Golden eagles were the most common raptor observed during the survey efforts in the Project area. Golden eagles were observed in all age classes including juvenile, sub adult, and adults. Additionally, golden eagles were recorded in each month during the three year survey in the Project area.

Aerial raptor nest surveys were conducted in the Project area with an additional 1-mile buffer area in the spring of 2009. Additionally, comprehensive ground surveys were completed by visually inspecting areas of suitable habitat (trees, rock outcrops, etc.). During those combined surveys, one active golden eagle nest, with an incubating adult, was located. Golden eagle nesting habitat is present in the Project area and the general Project area is suitable for foraging. No communal golden eagle roosts or habitat for such roosts exist in the Project area. There are no known prey concentration areas in the Project area.

Post-construction monitoring was conducted for three years (2011-2014) after the Project became operational. This approach used a systematic methodology to monitor approximately 35 percent of the total turbines in the Project area. In the three year period, no golden eagle remains were observed related to the 26 turbines surveyed. However, a total of 11 individual golden eagle remains were found incidentally from 2011 to date. The Service assumes that the eagle remains found resulted from mortality related to wind turbines present at the Project area. Additionally, eagle nest surveys were conducted within the Project footprint as well as a 2-mile buffer around the Project for three years (2011-2014) after the Project became operational. Three additional golden eagle nests were detected during the referenced timeframe, located within the 2 and 2.5 mile buffer of the Project area.

### 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 here. 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. A total of 340 20-minute fixed-point surveys were conducted in 2008-2009 prior to Project construction. Eighty-three bird species were identified. A total of 330 individual raptors were recorded within the wind resource area, representing 11 species. Waterbirds were observed only in the spring (0.04 bird/plot/20-minute survey), while waterfowl use was highest during the spring (0.59 bird/plot/20-minute survey). Shorebirds had the highest use in spring (0.37 bird/plot/20-minute survey), compared to other times of the year. Raptor use was highest during the summer (0.81 bird/plot/20-minute survey) and lowest during the winter (0.33 bird/plot/20-minute survey). The most common raptors observed were golden eagle and ferruginous hawk. A total of 179 golden eagle observations in 145 groups and two observations of individual bald eagles were documented. Golden eagles composed approximately 8.8% of all observations and had the highest overall use of all raptor species observed in all seasons. Golden eagles had the highest recorded use at Point 2 (0.66 eagle/800-meter plot/20-minute survey); however, Point 2 is outside the Phase 1 boundary. Vultures were recorded only during the fall (0.03 bird/plot/20-minute survey), while large corvids had highest use during the fall (0.65 bird/plot/20-minute survey), followed by summer (0.33), spring (0.20), and winter (0.08). Passerine use ranged from 0.13 bird/plot/20-minute survey in winter to 2.82 in spring; however, passerines were only recorded within a 100-meter viewshed and, therefore, passerine use is not directly comparable to the other bird types, which were recorded out to 800 meters.

### 3.2.3 Post-construction Surveys for Migratory Birds

Over the three years of post-construction fatality monitoring (2011 – 2014) 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 to moderate, compared to other wind energy facilities (Martinson et al. 2014). The number of fatalities/turbine/year averaged 2.84 with 1.30 in year 1, 3.94 in year 2 and 3.29 in year 3 (Martinson et al. 2014, Appendix G in the ECP). The estimated annual mortality rate at turbines ranged from 0.87 to 2.63 fatalities/MW/year, and averaged 1.90 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.

As per the ECP (page 16; Appendix A), no federally listed threatened or endangered species were observed in the Project area during pre-construction fixed-point avian use surveys. Seven species listed as federally endangered or threatened under the ESA may occur in the Project area. These species include the black-footed ferret (*Mustela nigripes*), interior least tern (*Sternula antillarum*), piping plover (*Charadrius melodus*), whooping crane (*Grus americana*), pallid sturgeon (*Scaphirhynchus albus*), Ute ladies'-tresses (*Spiranthes diluvialis*), and western prairie fringed orchid (*Platanthera praeclara*).

On March 16, 2020, the Service initiated an intra-service Section-7 consultation for the issuance of an IETP for the Project (Appendix B). It was determined that the Project will have "no effect" on six federally listed species: black-footed ferret, interior least tern, pallid sturgeon, piping plover, whooping crane and designated critical habitat for the species, western fringed orchid, and "may affect but not likely to adversely affect" on Ute ladies'-tresses. 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 March 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.

Class III Cultural Resource Inventories were completed for the Project by Western Land Service (WLS) in April and May 2009 for the construction of the Project, and a Class III Cultural Resources Inventory Report was submitted to the Wyoming State Historic Preservation Office to be included into the statewide cultural resource data sets. A Class III inventory is an intensive, systematic field inspection performed by or under the direction of a SHPO recognized archaeological or cultural professional in an effort to identify all resources within an area that might qualify for the NRHP. The Applicant committed to all field data and eligibility recommendations provided by WLS to develop a layout that avoided direct impacts to NRHP-eligible sites. Additionally, micro-siting activities were conducted to further ensure that construction would not result in any impacts that may impair the cultural resources in the area. WLS recorded 54 sites and 238 isolated finds, of which 23 were recommended as eligible for listing on the NRHP. The Class III survey did not identify any historic trails or significant cultural resources within the Project area. No new ground-disturbing activities will occur as part of or related to issuing an IETP.

Eagles can be considered a feature or element of a Traditional Cultural Property pursuant to Service regulations (74 FR 46836-46874). 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 a permit.

## **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

In the absence of defensible project-specific eagle use information, the Service uses the upper 80<sup>th</sup> credible interval around the estimated number of annual eagle fatalities for permit decisions in an effort to avoid underestimating fatality rates at wind projects. In these instances, the Service uses the “priors-only” CRM to estimate the annual fatality rate at a project. For this Project, the fatality estimate from the “priors-only” CRM is discussed below. Additionally, the Service used the new-projected turbine size and design in order to most accurately predict the take of eagles as related to the future Project activities. The repower would take place sometime in year 2020.

### 4.1.2 Estimating Golden Eagle Take

Under the proposed action, we estimate that 6.6 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 198 golden eagles over the life of the 30-year permit). This prediction is based on a conservative approach that is expected to overestimate annual and cumulative take at the outset of the 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 applies before actual take

exceeds the permitted take levels (Table 16 of the ECP). 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 6.6 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 198 bald eagles over the life of the 30-year permit). This prediction is based on a conservative approach that is expected to overestimate annual and cumulative take at the outset of 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 applies before actual take exceeds the permitted take levels (Table 16 of the ECP). 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. We conducted our cumulative effects analysis as described in the Service's ECP Guidance (Service 2013; Appendix F).

One permitted project (Chokecherry Sierra Madre Phase I, CCSM) overlaps this LAP for both eagle species; however, it 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 55 eagles and the annual 1% and 5% benchmarks for this local area population are about one and three bald eagles, respectively. Currently, there is one operational project within this LAP for which lethal take of bald eagles is authorized and one project for which disturbance take is authorized. Taken together, this Project's take and the overlapping take of the two other projects could result in a total annual take of 6.78 bald eagles (or 12.38% of the LAP). 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 18%, 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). 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 12.38% is consistent with the management objective of eagle populations.

Thus, despite the fact that take at the LAP level of 12.38% 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 regulation. 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 21 reported bald eagle mortalities within the LAP between 2009 and 2018, for an average of 2.1 per year. These mortalities are all considered to be unpermitted take. Of these reported mortalities, all but two were due to anthropogenic causes (e.g., electrocution, shooting, poisoning, collision with wind turbines, etc.). The cause of death of the remaining two eagles are undetermined. On an annual basis, 2.1 unpermitted bald eagle takes equals about 3.83% 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 1,102 eagles and the 1% and 5% benchmarks for this local area population are 11 and 55, respectively. Currently, there is one operational project within this LAP for which lethal take of gold eagles is authorized. Taken together, this Project's take and the overlapping take of the other project could result in a total annual take of 7.38 golden eagles (or 0.67% of the LAP). Based on the Service's eagle mortality database, there were 142 reported golden eagle mortalities within the LAP between 2010 and 2019, for an average of 9.5 per year. These mortalities are all considered to be unpermitted take. Of these reported mortalities, approximately 77% were due to anthropogenic causes (e.g., electrocution, shooting, poisoning, collision with wind turbines, etc.) and approximately 23% of mortalities were from natural causes or undetermined. On an annual basis, 9.5 unpermitted golden eagle takes equals about 0.86% 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 one 5-year permit for the take of bald and golden eagles, at the currently unbuilt CCSM project that overlaps this LAP. 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 this Project on bald and golden eagles in the LAP. For bald eagles, the CCSM LAP and the Project’s LAP overlap by 55.14%, combined with authorized take for other permitted projects this represents an estimated overlapping take of 7.61 bald eagles per year beginning in 2022, or 13.9% of the Project’s 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 18% 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, the CCSM LAP and the Project’s LAP overlap by 63.1%, combined with authorized take for other permitted projects, this represents an estimated overlapping take of 13.06 golden eagles per year beginning in 2022, or 1.19% of the LAP. Similar to this Project, take of golden eagles at CCSM 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. The majority 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 a Permit which 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 396 eagles (6.6 golden eagles and 6.6 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, by regulation (50 CFR § 13.21), when in receipt of a completed application, the Service must either issue or deny a permit to the applicant. 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.

*Example of table comparing alternatives:*

	<b>Proposed Action – Issue Permit</b>	<b>Alternative 1 – No Action</b>
<b>Eagle Take Levels</b>	Up to 198 bald eagles and up to 198 golden eagles over 30 years	Up to 198 bald eagles and 198 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 198 bald eagles and 198 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

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 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 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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