



U.S. Fish and Wildlife Service

Environmental Assessment

For the Issuance of an Eagle Take Permit for Seven Mile Hill I and II Wind Energy Projects

Wyoming

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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. Under the expired regulations, the term "significantly" was defined at 40 C.F.R. § 1508.27 and requires consideration of both context and intensity.

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*) or golden (*Aquila chrysaetos*) eagles associated with the existing and operational Seven Mile Hill I and II (also known as Seven Mile Hill) Wind Energy Project (collectively "Project"), pursuant to the National Environmental Policy Act (NEPA) (42 United States Code [U.S.C.] §§ 4321–4347) and its implementing regulations (40 C.F.R. Part 1500; see also 46 C.F.R. Part 46), and United States Fish and Wildlife Service (Service) NEPA requirements (516 DM 1-4, 8). 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 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 145.15 megawatt (MW) total output wind energy farm located in Carbon County, Wyoming. The Project consists of 79 wind turbines and associated infrastructure (roads, transmission lines, etc.) and has been operating since December 2008; 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 December 30, 2019, requesting the maximum 30-year permit.

The Applicant is requesting an IETP for the take of up to 3.78 bald eagles and 7.74 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 2008, it has been responsible for the deaths of at least 21 golden eagles. On December 19, 2014, the Applicant pleaded guilty in U.S. District Court of Wyoming 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 (in 2024), 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, 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 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 Carbon County, Wyoming, approximately 8.4 miles (24 kilometers) from the town of Medicine Bow (Figure 1). The Eagle Conservation Plan (Attachment A) and the Final Report Wildlife Baseline Studies (Appendix A of the ECP) provide an overview of the environmental setting for the Project.

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 5,800 to 8,000 feet above sea level. The most common land cover types in the Project area are Wyoming big sagebrush (*Artemisia tridentata wyomingensis*), greasewood (*Sarcobatus vermiculatus*) flats, grasslands, riparian areas, playas, and areas dominated by buckwheat (*Eriogonum* spp.).

The Project is located on 8,680 acres of privately held fee lands owned by the Applicant with some inclusion of leased State lands. The initial Project development consisted of 79 General Electric 1.5-megawatt (MW) wind turbine generators, all with a total height of 119 feet (36 meters) secured to concrete foundations and a blade diameter of 77-feet (23 meters), with a total output of 118.5 MW. In addition to the wind turbine generators, other Project facilities include the onsite Seven Mile Hill collector substation (approximately 2.5 acres) where it is stepped up to 230 kilovolts and interconnected to the PacifiCorp Miners to Dave Johnston 230-kilovolt transmission line via the Freeze Out transmission substation. Approximately 26 miles (42 kilometers) of underground collection lines and 3.5-miles (5.6 kilometers) of overhead distribution lines were installed for the Project. All above ground lines currently meet the Avian Power Line Interaction Committee (APLIC) 2006 standards. Approximately 18 miles (29 kilometers) of roads were constructed for the Project. An operations and maintenance building was constructed for the Project on a one acre plot. Construction of the Project commenced in 2008 and operations began in January 2009. The Applicant repowered all of the 79 wind turbine generators with new nacelles and rotors in 2019. The repowered wind turbine generators are rated at 1.85 MW, have 299-foot (91-meters) rotor diameters, 413-foot (126-meters) hub height, and a total height of 413-feet, with the new total output of 146.2 MW

Standardized Post Construction Monitoring (PCM) 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.

As a commitment to the protection and conservation of bald and golden eagles, the Applicant has developed an Eagle Conservation Plan (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.

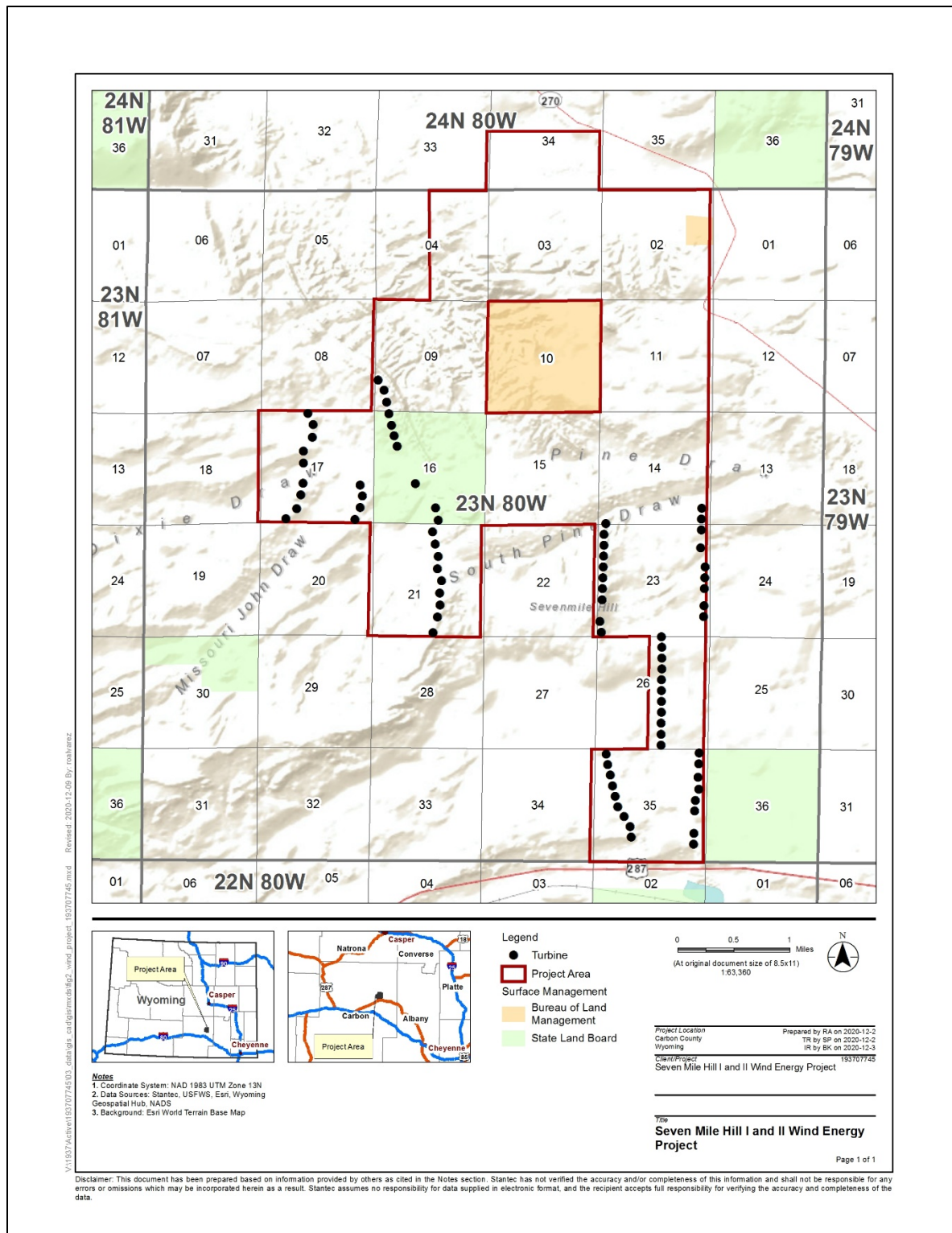


Figure 1. Seven Mile Hill Wind Energy Project Area and Turbines

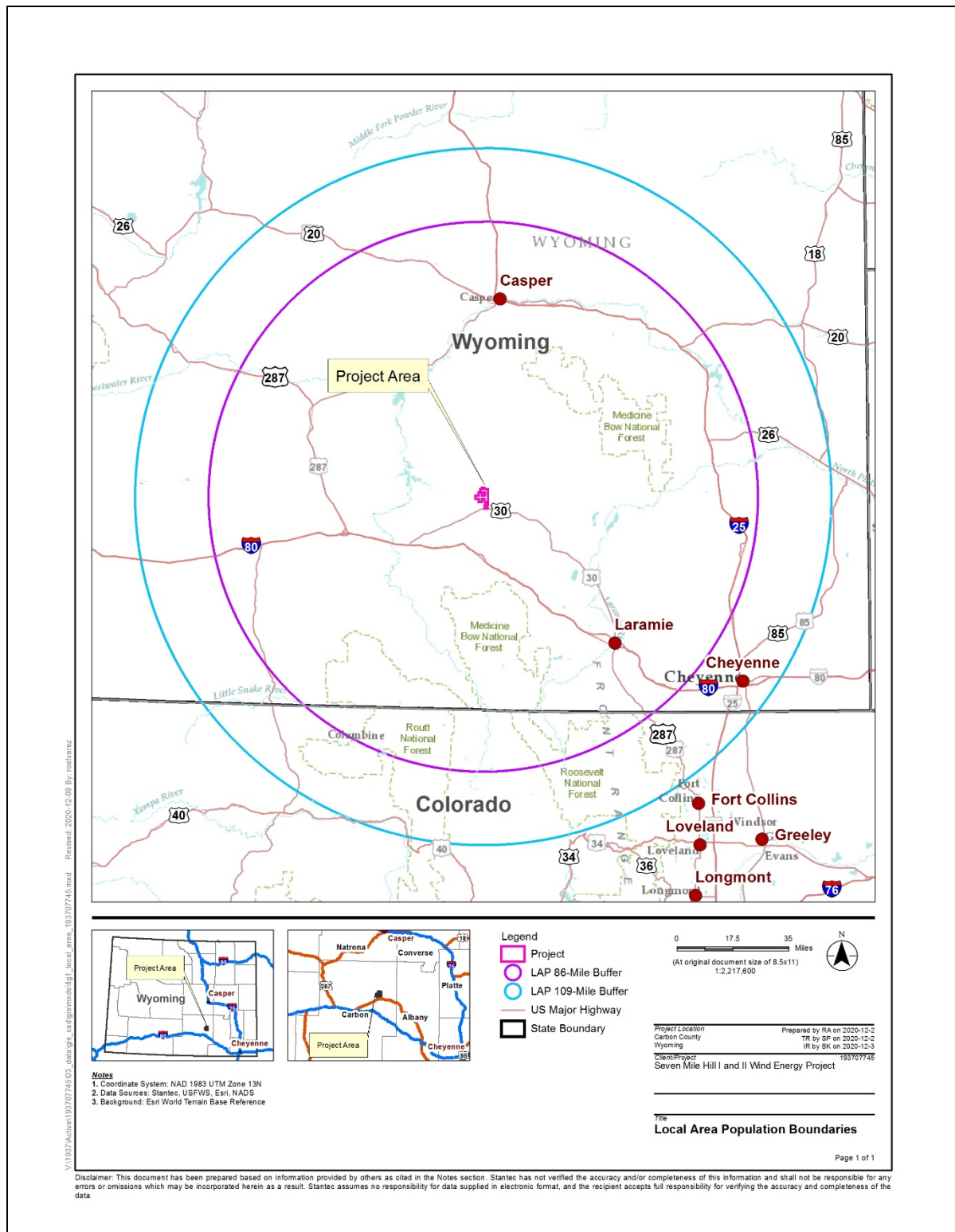


Figure 2. Seven Mile Hill Wind Project Boundary and Local Area Population (LAP) Boundary Map

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 (TAC) established with the Service and other stakeholders for the Project in 2008. In addition, 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 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 were 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 3.78 bald eagles and up to 7.74 golden eagles annually (for a total authorized take of up to 114 bald eagles and up to 233 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. Compensatory mitigation for golden eagles is not required for take estimated for the original project configuration but is required for additional take resulting from configuration or operational changes due to the repower (i.e., the difference between the annual take of the project based on the original hazardous volume and operational hours and the estimate based on the increased hazardous volume and operational hours after repowering). The additional estimated annual take at the 80th quantile is 2.67 golden eagles and must be offset at a 1.2:1 ratio (i.e., 3.21 golden eagles) annually.

Compensatory mitigation for this Project will consist of retrofitting high-risk power poles proportional to the estimated 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 (e.g., installing eagle-safe perches, installing perching deterrents, insulating electrified phases) approximately up to 890 high-risk power poles to reduce eagle mortality. 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. The 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 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 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 IETP 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 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.

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. One of the larger adaptive management strategies implemented to date is curtailment of wind turbines. During curtailment monitoring periods, a biomonitor actively surveys for eagles and shuts down turbines when an eagle is deemed at risk of colliding with a wind turbine. Two curtailment phases have occurred (or are ongoing) at the Project; experimental and informed.

The first curtailment phase was an experimental curtailment period initiated in November 2012 and continued through March 2015. The informed curtailment phase officially kicked off in December 2015 and included the use of one biomonitor, five hours per day (0900 – 1400) for a four-month period (December – March) each year. Applicant conducted additional evaluations to target one location within the Project area where an observation tower would be constructed and biomonitors would be stationed during curtailment surveys. The location was selected to maximize the biomonitor's viewshed across the Project area and was placed near the location with the highest eagle use. The tower also allowed biomonitors to have access to the Supervisory Control and Data Acquisition (SCADA) systems and the ability to manually curtail turbines without the need to radio to the facility staff. The informed curtailment phase has continued from December 2015 to the present.

In line with Applicant's adaptive management plan, changes to the informed curtailment program occur on an as needed basis based on the best available data. As eagle activity changes at the Project, the Applicant will evaluate the need to add additional biomonitors or start

curtailment activities earlier than October or extending the surveys beyond the defined March end date.

This adaptive management occurred during spring 2014, when the Applicant extended curtailment surveys through May. Additionally, a second biomonitor was added to increase the Project area coverage. This change was made due to an increase in eagle activity, resulting in eagle mortalities.

Technology Investigation (Detection and Deterrent)

As part of the adaptive management plan and in discussion with the Service, the Applicant evaluated technology that could potentially reduce eagle impacts at the Project. The Applicant evaluated an experimental detection and deterrence system at the Project. The WindSafeFlight™ system developed by BirdsVision Ltd. was the focus of this study and consists of various monitoring and detection sensors including cameras and radars, as well as acoustic and visual deterrents. Three systems (or nodes) were deployed at the Project. The system was deployed for an approximately three-month period, and a number of advancements and lessons learned were taken from the study in both deployment, system operations, data evaluation, among other areas. Data were collected during the period and BirdsVision continued to work on the system to support a later study at the Glenrock and Rolling Hills Wind Energy Project.

Pre-construction Surveys

Fixed-point avian use surveys were conducted at up to twelve plots across the Project area in the spring (April 30 – June 9, 2007) and the fall (September 18 – November 15, 2007). One hundred nineteen, 20-minute fixed points were completed, and no bald eagles were observed during the scheduled searches. In the spring of 2007, throughout the proposed Project area with a 1-mile buffer and within a 1-mile buffer of the proposed transmission line, raptor nest surveys were conducted following the survey methods detailed in the ECP (Appendix A 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, four golden eagle nests were identified within the study area during this surveys, and no bald eagle nests were located. Bald eagle nesting habitat is not present in the Project area and foraging habitat is minimal. No communal bald eagle roosts or habitat for such roosts exist in the Project area.

Post-construction Surveys

Multiple post-construction monitoring studies have been conducted since the Project became operational including: 1) a standard three-year post-construction monitoring (PCM) study (May 2009 – May 2012); 2) Golden Eagle Monitoring Study (2010-2011); 3) an informal monitoring effort (June 2012 – May 2013); 4) eagle specific bi-monthly searches at original PCM turbines (July 2013 – December 2015); and 5) eagle specific monthly searches at all Project turbines (January 2016 – present). No bald eagle mortalities have been detected at the Project. Total of 21 golden eagle mortalities have been detected at the Project since it became operational. Below is a

brief summary of these survey and monitoring efforts. For a more detailed discussion, please see the ECP (Attachment A).

PCM to assess avian mortality and raptor nesting activity began with a standard three-year carcass monitoring study from 2009 – 2011 (Johnson et al. 2010, 2011, 2012) and continued with post-agreement monitoring from 2012 – present. From May 2009 – May 2010 (Year 1), one dead golden eagle was found during standardized surveys of 640 turbine plot searches. 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.

During standardized carcass surveys of 656 turbine plot searches from May 2010 – May 2011 (Year 2), two dead golden eagles were documented. Finally, from May 2011 – May 2012 (Year 3), standardized carcass surveys of 551 turbine search plots, zero dead eagles were found.

A Video Monitoring Study was also conducted where cameras were mounted along high-risk strings and mortality monitoring was conducted to identify potential eagle strikes. Video monitoring occurred on a subset of turbine plots from March 2012 to June 2012. Six cameras were installed, and 19 turbines were identified as within the cameras' field of view. A total of 285 turbine plot searches were conducted and two golden eagles were found. Primary behavior observed on video review was circle soaring.

The second informal monitoring period (June 2012 – May 2013) was a monitoring study initiated after the standardized three-year PCM study was complete. The monitoring objective was not to conduct a rigorous research study, but rather to continue a reduced monitoring program after the formal three-year period. These surveys included monthly and bi-monthly searches at turbine strings where previous eagle mortalities had been discovered. A total of 610 turbine plot searches were conducted and two dead golden eagles were found, one during a scheduled search and the other incidentally by an onsite observer.

The third eagle specific bi-monthly period (July 2013 – December 2015) was a standardized monitoring study focused on eagle fatality detections. The general survey methods followed those used during the three-year standardized study. From July 2013 to December 2015 eagle-specific mortality monitoring was conducted twice per month at the original one-third of turbines. Search plots were 525-feet x 525-feet (160-meter by 160-meter) with 66-feet (20 meter) transect spacing. Eagle scans occurred from the pads for all turbines not searched by transects. Searcher efficiency trials (turkey skin wrapped around foam decoys) occurred to verify adequate detection rates at searched turbines and to determine detection potential at non-searched turbines. No carcass persistence trials were conducted during the period. A total of 1,536 turbine plot searches were conducted and two dead golden eagles were found, one during a pad check and the other incidentally at a non-searched turbine. The detection rate for turkey skin decoys at searched turbines was 87.5% and 60.0% for non-searched turbines. Experimental curtailment was initiated during this period (November 2012 – December 2015; see Attachment A for more details).

The fourth eagle specific monthly period (January 2016 – present) was a standardized monitoring study focused on eagle fatality detections. This effort is ongoing. The general survey methods followed those used during the three year standardized study (2009 – 2012).

From January 2016 – present, eagle-specific mortality monitoring was conducted once per month at 100% of the turbines. Search plots were 525-feet by 525-feet (160-meter by 160-meter) with 66-feet (20-meter) transect spacing. This protocol was developed in coordination with the USFWS. Searcher efficiency trials (turkey skin wrapped around foam decoys) were conducted throughout the monitoring period. Forty-eight trials were placed in 2016, 72 in 2017, 97 in 2018, and 55 through August 2019. No carcass persistence trials were conducted. In 2016, 897 turbine plot searches were completed, and no golden eagle carcasses were found. The detection rate for turkey skin decoys during 2016 was 68.8%.

In 2017, 889 turbine plot searches were completed, and site personnel incidentally found one dead golden eagle. The detection rate for turkey skin decoys during 2017 was 81.9%. In 2018, 926 turbine plot searches were completed, and two golden eagles were found; one during a schedule search and a curtailment observer incidentally found the other. The detection rate for turkey skin decoys during 2018 was 69.0%.

In 2019, 922 turbine plot searches were completed, and one golden eagle was found, incidentally by PacifiCorp. The detection rate for turkey skins in 2019 was 82.0%. Through August 2020, 610 turbine plot searches were completed, and two dead golden eagles were found, both during scheduled searches. The detection rate for turkey skins through August 2020 was 89.8%. Informed curtailment occurred throughout the duration of this monitoring period. Twenty-one golden eagle mortalities have been found during the Project's operational period. Seven of those were found during the three-year PCM study, one golden eagle was found during the golden eagle monitoring study searches, and two were found during the video study. An additional eleven golden eagle mortalities have been found during further monitoring from 2013 – 2021.

In addition, ten years of eagle nest surveys conducted within the Project footprint as well as a one-mile buffer around the Project. Six golden eagle nests were identified across all other survey years. No bald eagle nests were identified within the study area during pre- or post-construction surveys. All of the nests are located greater than one mile from Project turbines. The most occupied nests identified in any one year was five (2013); however, one nest was likely an alternative, so four golden eagle territories have been identified in the Project study area.

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 two- 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 119, 20-minute fixed-point avian surveys were conducted at twelve points as part of the pre-construction surveys of the Project area, spanning April 30 – June 9, 2007 and the fall (September 18 – November 15, 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. 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 efforts, including ongoing monitoring efforts, are briefly described in the Post Construction Surveys section above, and in more detail in ECP. No bald eagle mortalities were found during the survey efforts at the Project or since it became operational.

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 one-mile buffer for pre-construction surveys and an associated two- 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 1,058 golden eagles.

A total of 119, 20-minute fixed-point surveys were conducted as part of the pre-construction surveys of the Project area, spanning April 2007 through November 2007, yielding 34 golden eagle observations during the pre-construction surveys (spring 4/30/2007-6/8/2007 and fall 9/18/2007-11/15/2007) and 40 observations during the post-construction survey (3/20/2010-3/19/2011; only spring and fall are reported for consistency). Golden eagle use in spring and fall was slightly lower during the post-construction period (0.17 golden eagles/20-survey) compared to the pre-construction period (0.24). These survey results demonstrated eagle use across the study area, with higher use in the north.

Post-construction monitoring to assess eagle mortality was conducted for three years (2010-2011) after the Project became operational. Ninety-nine groups of golden eagles totaling 101 individuals were observed over 52 surveys, which would equate to one eagle observation for approximately every hour of survey time. The majority of the eagle observations were adults (32.7%), followed by sub-adults (7.9%) and juveniles (5.9%). The remaining eagle observations

were not able to be aged confidently. Golden eagle activity varied by season. Most (39.6%) of the eagles were observed during winter, followed by summer (24.8%). Lower numbers were observed in the spring and fall, when 17.8% of the observations occurred each season. These data indicate that the Project area is used primarily by wintering and breeding eagles and is not within a concentrated eagle migration corridor during either spring or fall migration. While numerous eagle flights were recorded through turbine strings, no clear use pattern was identified beyond flights to and from the ridge. Results did not identify concentrated use near prairie dog towns or sage-grouse leks.

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 the Migratory Bird Compliance Plan section 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. Twelve fixed-point surveys were conducted in spring and fall of 2007 prior to Project construction. Twenty-four bird species were observed during the 119 fixed point surveys that were conducted. Bird use by species was calculated as the mean number of birds per 20-minute survey. Overall, passerines were the most abundant bird type observed in the spring (3.23 birds/plot/20-minute survey), followed by raptors (0.48), and shorebirds (0.15). In the fall, the most abundant bird type observed was passerines (0.69 birds/plot/20-minute survey), followed by raptors (0.48), and upland gamebirds (0.30). During the study, 201 single birds or groups totaling 274 individuals were observed flying during fixed point bird use surveys. For all species combined, 84.1% of all flying birds observed were below the likely zone of risk, 12.3% were within the zone of risk, and 3.6% were observed flying above the zone of risk for typical turbines that could be used in the Project's resource area. The only bird type observed flying within the turbine zone of risk was raptors (32.7%). For species with at least five separate observations of flying birds, those most often observed within the zone of risk were golden eagles (37.0%), American kestrels (25.0%), and ferruginous hawks (16.7%). Based on the use (measure of abundance) of the site by each species and the flight characteristics observed for that species, golden eagles and American kestrels have the highest probability of turbine exposure.

3.2.3 Post-construction Surveys for Migratory Birds

The first standard three-year PCM study period (May 2009 – May 2012) included an initial one-year post-construction monitoring and reporting program (May 2009 – May 2010) to estimate and evaluate Project impacts, as required by the Industrial Siting Council permit. This program was designed for all birds and bats, not eagles specifically, and searched plots at one-third of the Project turbines. Post-construction monitoring efforts included standardized carcass searches, searcher efficiency bias trials, and carcass persistence bias trials. Large game birds (e.g., mallards) were used for trials. After the one-year monitoring study, in coordination with the TAC, two additional years of monitoring were implemented (May 2010 – May 2012). Detailed methods for the three monitoring years are provided in the technical reports in the ECP. A total of 640 combined turbine and met tower searches were conducted during the first study year. Nineteen bird mortalities were found during this period.

The adjusted fatality estimate for all birds combined at wind turbines was 0.99/turbine/year (0.66/MW/year), which results in a total mortality estimate of 78 birds for all 79 turbines combined. When the total estimate of 78 bird fatalities at wind turbines is combined with the estimated six small bird fatalities at met towers, the estimate is 84 bird fatalities per year for the entire facility.

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. Five 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, piping plover (*Charadrius melodus*), whooping crane (*Grus americana*), pallid sturgeon (*Scaphirhynchus albus*), and western prairie fringed orchid (*Platanthera praeclara*).

On November 25, 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: piping plover, whooping crane, pallid sturgeon, and western prairie fringed orchid. 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.

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

The CRM uses the pre-construction eagle use of a wind facility (eagle exposure), the probability that an eagle collides with a turbine (collision probability), and the hazardous space of a wind facility operating during daylight hours (expansion factor) to estimate the annual number of eagle fatalities at a wind facility. These parameters are modeled in a Bayesian framework where uncertainty surrounding eagle exposure and collision probability are defined by national prior-probability distributions (priors) for each parameter. Wind facility-specific pre-construction use, and post-construction mortality monitoring data can be used to update these priors, thereby reducing uncertainty in the parameter estimates, yielding more precise estimates of annual eagle fatalities at a wind facility (New et al. 2015).

To estimate annual fatalities at for this Project, we did not have sufficient pre-construction eagle-use data to update exposure for the CRM; therefore, we used the national priors for the eagle exposure parameter. The collision probability prior was updated iteratively using the expected value of fatalities estimated in Evidence of Absence statistical approach and software (EOA; Dalthorp et al. 2017). We adjusted the expansion factor based on applicant-provided operational daylight hour data collected during monitored years.

The Project has implemented various curtailment strategies during the mortality monitoring period. To account for this, we adjusted the total project annual operational daylight hours in the CRM based on monthly daylight operational hours August 2016–February 2020 provided by the applicant. We estimated operational daylight hours for January through July 2016 by taking the mean monthly daylight hours from January through July 2017/2018 (i.e., turbines were repowered in 2019 and were not included). Projected (future) daylight hours for estimating take were also provided by the applicant and were calculated by taking the sum of monthly averages 2016–2018 multiplied by an increased capacity factor that is based on manufacturer and calculated data.

4.1.2 Estimating Golden Eagle Take

Under the proposed action, we estimate that up to 7.74 golden eagles at the 80th quantile 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 233 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 mortality 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 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. To fully offset the authorized take (that is not part of the baseline 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 3.78 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 114 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 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. 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 LAPs 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 LAPs. 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).

Four permitted projects overlap the LAP for bald eagles and three permitted projects overlap the LAP for golden eagles. The Choke Cherry Sierra Madre (CCSM) wind project LAP does overlap with both LAPs as related to the Project, however it's not currently built, and the authorized permitted take does not go into effect until 2022 or later. Because of this anticipated take, 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 0.55 and 2.76 bald eagles, respectively. Four currently permitted project LAP areas overlap this Project's LAP 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 11.02 bald eagles (or 20.00% of the LAP). This is above the 5% benchmark; however, the North American Breeding Bird Survey (BBS) population average growth trend (1966-2019) estimate for bald eagles in Wyoming and Project LAP is 9.9% and 18.6%, 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 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 20% is consistent with the management objective of eagle populations.

Thus, despite the fact that take at the LAP level of 20% 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 eagle numbers 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 20 reported bald eagle mortalities within the LAP between 2011 and 2020, for an average of 2.22 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, 2.22 unpermitted bald eagle takes equals about 4% 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 1,058 eagles and the 1% and 5% benchmarks for this local area population are 11 and 53, respectively. Three currently permitted projects overlap this Project's LAP 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 16.33 golden eagles (or 1.54% of the LAP). Based on the Service's eagle mortality database, there were 137 reported golden eagle mortalities within the LAP between 2011 and 2020, for an average of 15.22 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, 15.22 unpermitted golden eagle takes equals about 1.48% 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. 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, and therefore would not significantly impact bald eagle populations.

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

The CCSM project has been issued a five-year IETP for take of bald and golden eagles which expires at the end of 2023. CCSM is expected to become operational (in part) in approximately one or more years and the initial permit expires at the end of 2023. Take of eagles, related to the operation of the CCSM is not authorized prior to 2022. Permitted take of eagles is not currently occurring at this project site, however, we anticipate that take could occur in approximately one year or more. Because of this anticipated take, we included the future effects of CCSM-related take on the Project in this section.

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. At the time this EA is being prepared, two of these operational wind facilities, located in Wyoming, have an EA prepared for each project and those EAs have been released for a public comment period. Even with those impacts being considered, 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.

4.3 Cumulative Effects of Alternative 1 – No Action

Even though we would take no action on the IETP application under the No-Action Alternative, the project would likely continue to operate without authorization for take of eagles. 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. Negative impacts to golden eagle populations such as: population decline, potential loss of eagle breeding territory, and decrease in genetic diversity could occur at a cumulative scale. The eagle take at the Project would be considered un-permitted and would not be accounted for in the permitted take, cumulative effects analysis when considering the impacts related to future projects seeking an IETP. Additionally, there would be no PCM mortality data for future use by the Service to update and strengthen the CRM, related analysis and supporting data. Acquiring such data, to refine and strengthen the currently used process for cumulative effects analysis, ensures that conservation management objectives for eagle populations are being met at a cumulative scale. No permit check-in visits would occur with the Applicant, and the Service would have no way to relate the eagle mortality occurring at this Project to other wind projects in the area, on a cumulative scale, when updating existing IETPs. Because the Applicant would not be bound by the terms and conditions of the IETP, the Service would not be able make recommendations for adaptive management triggers and implementation of conservation measures that would benefit eagle populations on a cumulative scale.

4.4 Comparison of Effects of Alternatives

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

	Proposed Action – Issue Permit	Alternative 1 – No Action
Eagle Take Levels	Up to 114 bald eagles and up to 233 golden eagles over 30 years	Up to 114 bald eagles and 233 golden eagles over 30 years
Avoidance and Minimization	Project is operational and will continue to operate	Project is operational and will continue to operate
Compensatory Mitigation	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).
Unmitigated Eagle Take	Zero	Up to 114 bald eagles and 233 golden eagles over 30 years
Adaptive Management	The plan is to avoid and minimize impacts to avian resources	The plan is to avoid and minimize impacts to avian resources
Data Collected by Service	Annual monitoring report of fatalities; reporting of injured eagles; information on the effects of specific, applied, conservation measures	None
Company Liability for Eagle Take	No (if in compliance with permit conditions)	No as long as covered by the duration and conditions of MBCP under Court Settlement and plea agreement ending in 2024.

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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