



U.S. Fish and Wildlife Service

**Environmental Assessment for the
Issuance of an Incidental Eagle Take Permit for
Pryor Mountain Energy Project
Located in Carbon County, Montana**

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Attachment A. Eagle Conservation Plan for the Pryor Mountain Wind Energy Project

Attachment B. Bird and Bat Conservation Strategy

Attachment C. Intra-Service Section 7 Biological Evaluation Form

List of Acronyms

ACHP	Advisory Council on Historic Preservation
ACPs	Advanced Conservation Practices
APLIC	Avian Power Line Interaction Committee
BBCS	Bird and Bat Conservation Strategy
C.F.R.	Code of Federal Regulations
CRM	Collision Risk Model
EA	Environmental Assessment
ECP	Eagle Conservation Plan
ECPG	<i>Eagle Conservation Plan Guidance Module 1 – Land-based Wind Energy</i>
EIS	Environmental Impact Statement
EMU	Eagle Management Unit
ESA	Endangered Species Act
F.R.	Federal Register
IETP	Incidental Eagle Take Permit
LAP	Local Area Population
MBTA	Migratory Bird Treaty Act
MW	megawatt
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	Nation Register of Historic Places
PEIS	Programmatic Environmental Impact Statement
PCMM	Post Construction Mortality Monitoring
SHPO	State Historic Preservation Office
U.S.C.	U.S. Code
WTG	Wind Turbine Generator

1. Introduction

This Environmental Assessment (EA) is prepared to analyze the environmental consequences of the U.S. Fish and Wildlife Service (FWS) issuing an Incidental Eagle Take Permit (IETP), or permit, for the take of bald (*Haliaeetus leucocephalus*) and golden (*Aquila chrysaetos*) eagles associated with the existing and operating Pryor Mountain Wind Energy Project (Project), pursuant to the National Environmental Policy Act (NEPA) (42 U.S.C. §§ 4321–4347). The Bald and Golden Eagle Protection Act (Eagle Act) allows the Secretary of the Interior to issue regulations to authorize the take of eagles for various purposes (16 U.S.C. §§ 668–668d; *see also*, 50 C.F.R. § 22.80). The FWS promulgated its regulations governing take of wildlife and plants at 50 C.F.R. Chapter 1. Issuance of an IETP by the FWS for take that is incidental to otherwise lawful activities under the Eagle Act constitutes a discretionary federal action that is subject to NEPA. This EA assists the FWS 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 FWS’s regulations allow the issuance of IETPs only when the take is compatible with the preservation of each eagle species, defined 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.” (50 C.F.R. § 22.6). Thus, the FWS’s regulations authorize incidental take of eagles when take is associated with, but not the purpose of, an activity (50 C.F.R. § 22.80).

The Applicant, PacifiCorp (Applicant), is requesting Eagle Act and applicable federal regulatory take coverage for operational activities associated with the Project located in Carbon County, Montana. The Applicant submitted a 30-year IETP application on January 16, 2020, under the FWS’s 2016 Eagle Rule regulations (*see* 50 C.F.R. § 22). The Applicant also submitted an Eagle Conservation Plan (ECP) in support of the application (Attachment A, incorporated herein by reference).

The Applicant is requesting an IETP for the take of up to 1.54 bald eagles and 2.61 golden eagles annually, over the 30-year permit duration. Estimated take for this project is based on pre-construction eagle use surveys and will be updated with observed fatality data at the first check-in. This EA evaluates whether issuance of the IETP will have significant impacts on the existing human environment. “Significance” under NEPA is defined at 40 C.F.R. § 1501.3 and requires consideration of the potentially affected environment and the degree of effects to that environment.

This proposal conforms with, and carries out, the management approach analyzed in, and adopted subsequent to, the FWS’s *Programmatic Environmental Impact Statement for the Eagle Rule Revision*, December 2016 (PEIS; FWS 2016c). The PEIS is incorporated herein by reference, and this EA is tiering to the PEIS (40 C.F.R. § 1508.1 (ff)). Project-specific information not considered in the PEIS will be considered in this EA as described below.

1.1 Purpose and Need

The FWS’s purpose in considering the proposed action (*see infra*, Chapter 2) is to fulfill our authority under the Eagle Act and its implementing regulations by issuing an IETP for eagle take while ensuring the conservation of bald and golden eagles. 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 or federal regulations. Under federal regulations, the FWS may issue an IETP for eagle take that is associated with, but not the purpose of, an activity (50 C.F.R. § 22.80(e)(2)(i)(v)). Such permits can be issued by the FWS 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* 50 C.F.R. pt. 22. The preservation standard under the FWS’s regulations means to be “consistent with the goals of maintaining stable or increasing breeding populations of bald and golden eagles in all eagle management units and the persistence of local populations throughout the geographic range of each species” (50 C.F.R. § 22.6).

The need for the FWS’s proposed action is to respond to the Applicant’s IETP application for incidental take of bald and golden eagles resulting from the operation of the Project. The decision must comply with all applicable statutory and regulatory requirements and must be compatible with the preservation of eagles.

1.2 Authorities

FWS 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 U.S.C. §§ 668–668e) and the FWS’s regulations (50 C.F.R. pt. 22). The PEIS (FWS 2016c) 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 Project became fully operational in April 2021 and is located in Carbon County, Montana, approximately eight miles (12.9 kilometers) southeast of Bridger, Montana (Figure 1). The ECP provides an overview of the environmental setting of the Project. The Project is owned and operated by PacifiCorp. The Applicant submitted an application for an IETP for the Project in January 2020 and is requesting an IETP for a 30-year period.

The Project consists of 57 Vestas 2.0 MW WTGs with a 180 foot (55 meter) rotor radius and 262 foot (80 meter) hub height (total height of 443 feet (135 meters) to fully extended blade tip), 53 Vestas 2.2 MW WTGs with a 180 foot (55 meter) rotor radius and 262 foot (80 meter) hub height (total height of 443 feet (135 meters) to fully extended blade tip), and four GE 2.3 MW WTGs with a 190 foot (58 meter) rotor radius and a 262 foot (80 meter) hub height (total height of 453 feet (138 meters) to fully extended blade tip; Figure 2). The total nameplate capacity for the Project is 240 MW.

The Project also includes approximately 49 miles (79 kilometers) of underground collector lines, approximately 25 miles (40 kilometer) of wind turbine generator (WTG) access roads, an

operations and maintenance facility, three meteorological (met) towers, two substations, and a short (approximately 50 feet (15 meters)) slack span or strain bus to connect the two substations. All above ground power lines were constructed following Avian Power Line Interaction Committee (APLIC) guidelines (2006). The Project was connected to an existing transmission line and is located within 24,850 acres of private land (Figure 2).

As a commitment to the protection and conservation of bald and golden eagles, the Applicant has developed an ECP for the Project (Attachment A). The Project's ECP is the foundation for the IETP application. The ECP was written in coordination with the FWS and follows the Eagle Conservation Plan Guidance (ECPG) titled *Recommended Approach for Development and Submission of Eagle Conservation Plans submitted to Region 6, Migratory Management Office in support of an Eagle Incidental Take Permit Application for Wind Energy Project* (FWS 2019). 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.

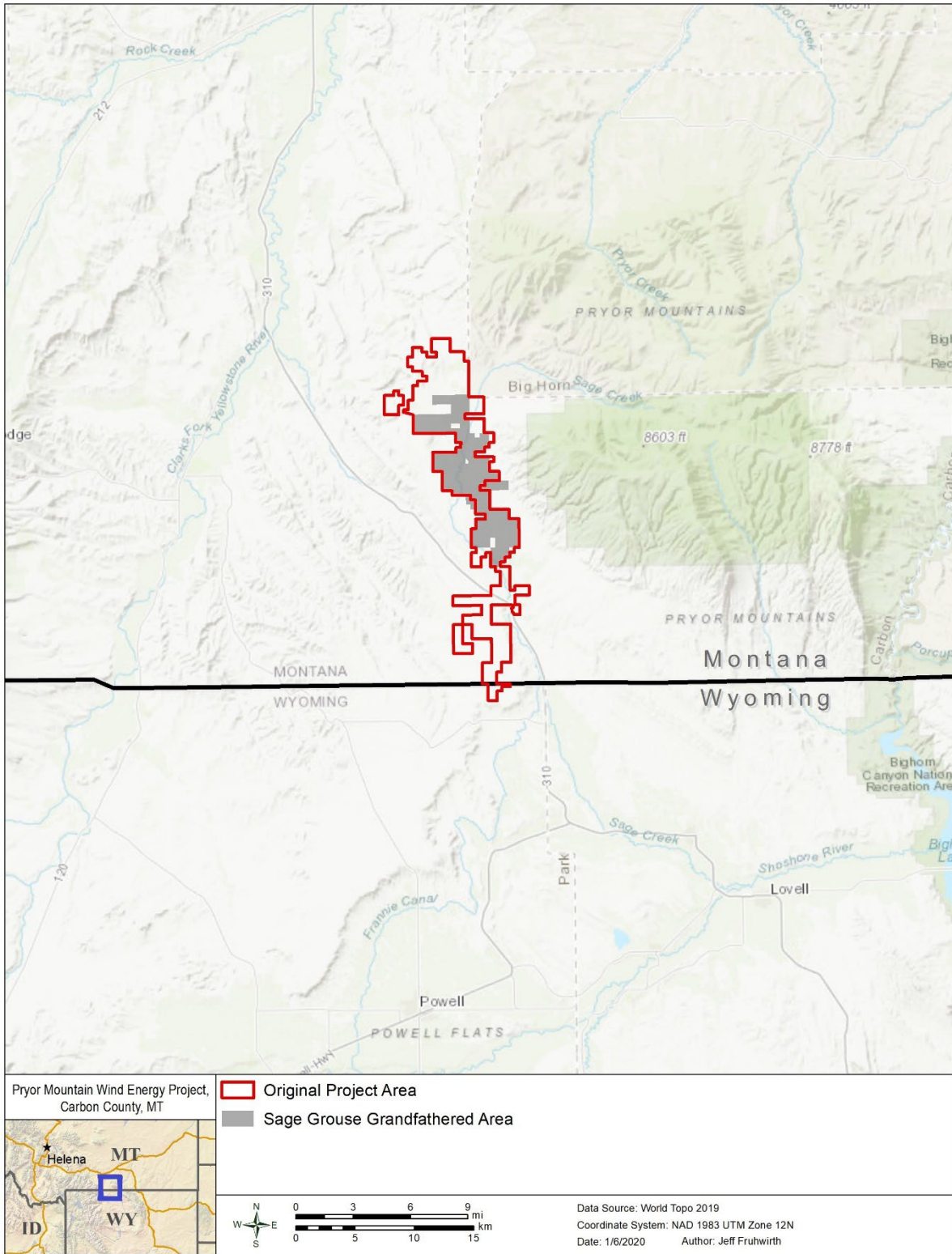


Figure 1. Location of the Pryor Mountain Wind Energy Project, Carbon County, Montana.

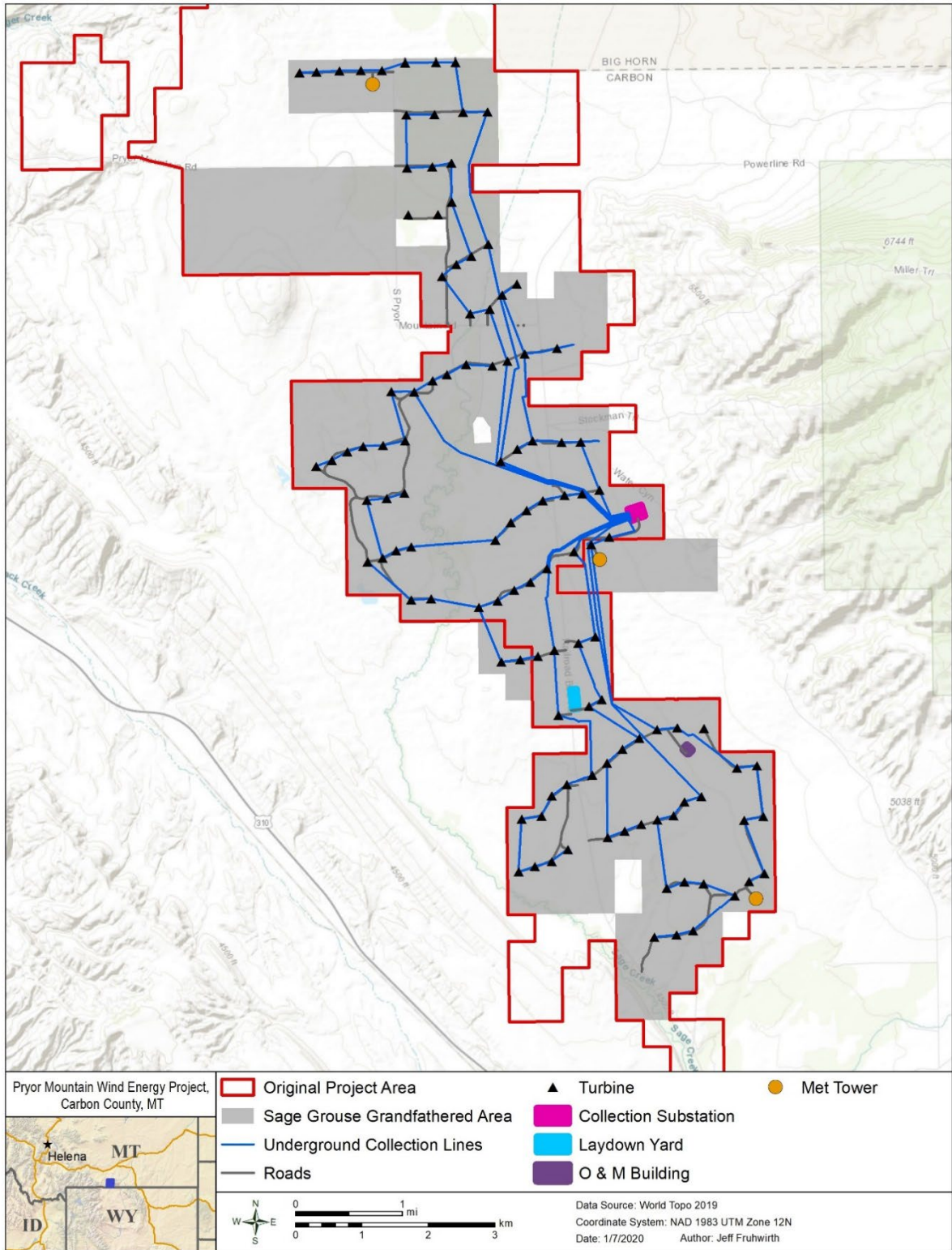


Figure 2. Facilities Layout for the Pryor Mountain Wind Energy Project, Carbon County, Montana.

1.4 Scoping, Consultation, and Coordination

This EA incorporates, by reference, the scoping performed for the PEIS (Chapter 6, page 175). The Applicant worked with the FWS to develop the ECP in support of its application to avoid, minimize, and provide a plan for compensatory mitigation.

Prior to permitting and constructing the Project, the Applicant coordinated with the FWS, Montana Fish, Wildlife and Parks (MFWP), Bureau of Land Management (BLM), and Montana Audubon about the Project beginning in 2009. Consultation with these agencies focused on state Species of Concern (SOC), federally threatened and endangered (T&E) species and habitat, biological resource studies, survey and monitoring protocols, eagle and non-eagle raptor nest setbacks, wetland setbacks, potential impacts to avian and bat species, and avoidance/minimization/conservation/mitigation measures. In addition, the Applicant entered into a two-year-long Memorandum of Understanding (MOU) with Montana Audubon in 2012 memorializing Project infrastructure setbacks from historical raptor nests and both parties' commitment to maintain open communications with each other regarding the Project and potential wildlife impacts. Agency communications, recommendations, and involvement are further described in the ECP (Attachment A).

Throughout Project development, construction, and post-construction, the Applicant evaluated and adopted conservation measures into the infrastructure layout and design, construction/clean-up, and operations in order for the Project to avoid and minimize impacts to eagles.

1.4.1 Tribal Coordination and Public Comment Period

The FWS 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 the draft EA was made available for the 30-day public comment period, we contacted 35 native sovereign nation tribal leaders of tribes potentially affected by this undertaking via email, with an attached formal letter, and offered 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 the draft EA by the FWS.

The FWS published the draft EA on May 23, 2024, opening a 30-day public comment period which ended on June 22, 2024. We did not receive any comments during the public review period. It has been determined that there is no new significant information, and the FWS has prepared a FONSI in accordance with NEPA regulations (40 C.F.R. § 1508.13). Coordination with tribal governments is an ongoing process (see Exec. Order No. 13175 for details on consultation and coordination policy). If the FWS issues a 30-year IETP to the Applicant and the Applicant chooses to apply for a new permit when the IETP expires, the tribes will again be notified and offered the opportunity for consultation.

2. Proposed Action and Alternatives

2.1 Proposed Action

We propose to issue a 30-year IETP to take up to 1.54 bald eagles and 2.61 golden eagles annually (for a total authorized take of up to 47 bald eagles and 79 golden eagles over the life of the 30-year IETP) 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 sections of this EA and in the ECP.

2.1.1 *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 approximately 870 high-risk power poles proportional to the predicted and adjusted golden eagle take estimate calculated by the FWS and will be in the Central Flyway EMU. Other compensatory mitigation measures could be considered in the future if alternatives to power pole retrofits have been approved by the FWS. Retrofitting could include all types of retrofits performed to be consistent with APLIC (APLIC 2006) suggested practices (e.g., reframe, rebuild, insulating covers, and pole replacement). The Applicant will either work directly with local utilities to compensate them for retrofitting poles or place the funds to retrofit power poles in a third-party mitigation account. Regardless of the method(s):

- All power poles retrofitted by the Applicant will be high-risk power poles that pose a high risk of electrocution to golden eagles.
- All power poles retrofitted by the Applicant will be located within the Central Flyway EMU.
- All power poles retrofitted by the Applicant must be in addition to any retrofits that are already being implemented or are already scheduled for retrofitting or replacement by the power company in the foreseeable future.
- An inspection and maintenance program will be required to ensure the retrofits remain effective for the duration of the credited period and will be repaired or replaced if no longer effective in preventing eagle electrocution.
- Reporting requirements will include an accounting of the poles retrofitted, outcomes from the implementation monitoring work, and the agreement with the utility for the long-term maintenance of the retrofits.
- If retrofits involve pole replacement or other land disturbance, a cultural resources assessment must be conducted at the location of each pole and the assessment must be provided to the FWS for review and approval before retrofits are conducted.
- The Applicant will retrofit the required number of poles to offset estimated take of eagles at a 1.2 to 1 mitigation ratio.
- The mitigation plan must be approved by the FWS. Any changes to the mitigation program must be coordinated with and approved by the FWS.

The FWS has calculated the required number of poles using the Resource Equivalency Analysis (REA) model for eagles, as outlined in the ECPG (FWS 2013). Inputs into the FWS's REA include the effectiveness of retrofits and the timing of the implementation of compensatory mitigation. Both the length of time retrofits are effective in avoiding the loss of eagles (to be determined from the type and quality of retrofit and the inspection and maintenance commitments) and when the retrofits will be completed affect the number of poles required. Compensatory mitigation will be completed for the 30-year permit period by retrofitting approximately 870 high-risk power poles to mitigate the loss of 79 golden eagles. If there are changes to the longevity or implementation schedule, the FWS will recalculate the number of poles that will be required to offset authorized take at a 1.2 to 1 mitigation ratio. Compensatory mitigation will be completed to fully offset golden eagle take over the duration of the 30-year permit and will be determined at each permit review (check-in) based on Post Construction Mortality Monitoring (PCMM) efforts and related analysis. If the estimated take is less than mitigated take at the permit review, the excess mitigation will be carried forward for the next permit review period. If take is higher than what was mitigated, increased mitigation will be required. The Applicant's commitment to retrofit power poles to meet or exceed the APLIC 2006 guidelines would minimize the risk of bird electrocution and collision on the retrofitted power poles (APLIC 2006).

2.1.2 Post-Construction Mortality Monitoring

The Applicant will conduct PCMM for all years of the permit, including an intensive monitoring effort for the first two full years after the permit is issued, as part of the conditions 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 the Adaptive Management Plan. 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. Additionally, any bald or golden eagle found injured or dead must be reported to the Migratory Bird Permit Office within 24 hours of discovery. Eagle remains will be handled and processed according to current FWS procedures.

2.1.3 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 (Attachment A). The stepwise process identified in the ECP will be used to guide the implementation of additional conservation measures as needed and applies before actual take exceeds the permitted take levels.

2.2 Alternative 1: No Action

Under the no action alternative, the FWS would deny the permit application and not issue an IETP. 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 (MBTA), or the Eagle Act disqualifies any such person from receiving or exercising the privileges of a permit).

The no action alternative analyzes predictable outcomes of the FWS 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 implemented.

Post-construction eagle mortality monitoring would not be required, potentially limiting data available to the FWS to contribute to refining the Collision Risk Model (CRM). The Applicant may choose to implement some, none, or all of the conservation and adaptive management measures. Further, the Applicant would not be required to provide compensatory mitigation and would not retrofit high-risk power poles. 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 and applicable federal regulations should take of an eagle occur.

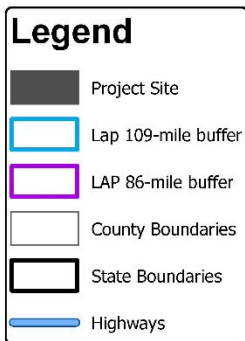
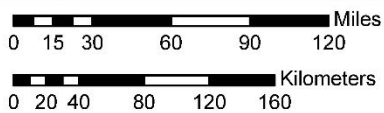
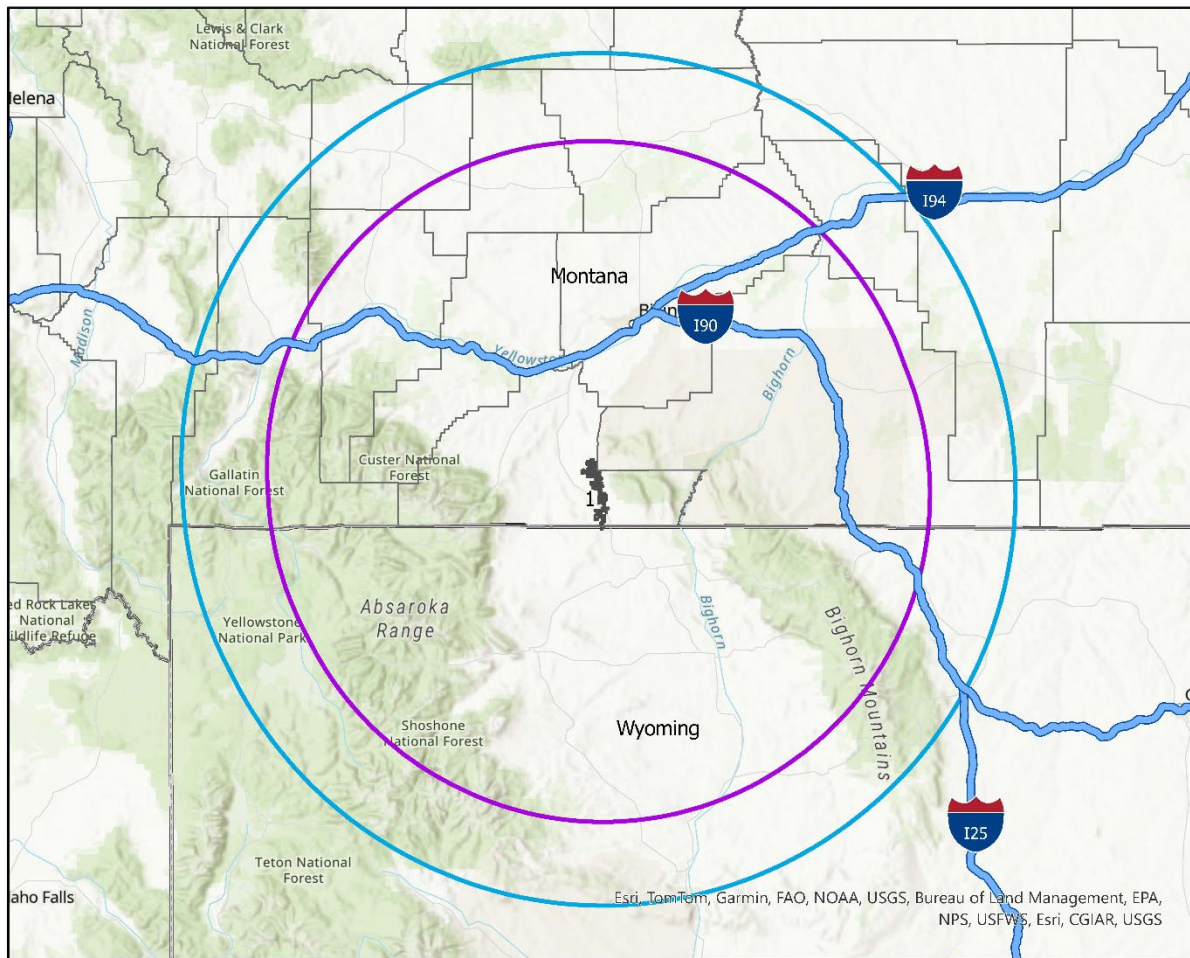
3. **Affected Environment**

This section describes the current status of the environmental resources and values that are affected by the proposed action and no action alternative. The ECP was prepared, and consultation with the FWS was completed, applying recommendations and guidance provided in the ECPG (FWS 2013), as well as the *U.S. Fish and Wildlife Service Land-based Wind Energy Guidelines* (FWS 2012).

3.1 Bald Eagles

General information on the taxonomy, ecology, distribution, and population trends of bald eagles is given in Section 3.2.1 of the PEIS (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, or 138 kilometers, of the Project; Figure 3), and the Project area (the actual footprint of the Project and an associated 1.0-mile; 1.6-kilometer) buffer for pre-construction surveys. The estimated median population size of bald eagles in the Central Flyway EMU is 30,427 (FWS 2020). Based on the FWS’s process to calculate the LAP, the population size of the LAP is estimated to be 660 bald eagles. In addition to the summary below, survey efforts for bald eagles and their nests are discussed in detail in the ECP (Attachment A).

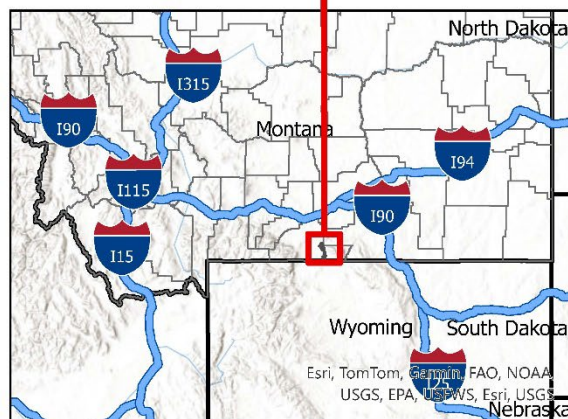
Pryor Mountain Wind Energy Project



Region 6



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Coordinate System: NAD 1983 UTM Zone 13N	Author: DJC	Date Created: 4/17/2024
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Figure 3. Local Area Population Boundaries for the Pryor Mountain Wind Energy Project, Carbon County, Montana.

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 (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, or 175 kilometers, of the Project; Figure 3), and the Project area (the actual footprint of the Project and an associated one-mile (1.6-kilometer) buffer for pre-construction surveys. The estimated median population size of golden eagles in the Central Flyway EMU is 15,327 (FWS 2016a). Based on the FWS’s process to calculate the LAP, the population size in the LAP is estimated to be 1,454 golden eagles. In addition to the summary below, survey efforts for golden eagles and their nests are discussed in detail in the ECP (Attachment A).

3.3 Current and Past Adaptive Management

The Applicant has communicated with the FWS and Montana Department of Fish, Wildlife, and Parks to identify the need for adaptive management actions recommended to support eagle risk reduction for the Project. The Applicant will continue to work with the FWS to address adaptive management measures for the Project, as appropriate. This includes continual evaluation and adaptation of the methodologies for additional data collection, the results of new information, and decisions regarding the need for changes to the conservation measures that are implemented to further reduce risk to eagles. If an IETP is issued by the FWS for the Project, it will incorporate specific actions that the Applicant will need to implement if the eagle take authorization under the permit approaches or reaches the amount of take that has been authorized.

A stepwise process will be used to guide the implementation of additional conservation measures as needed for the Project (Table 1). The adaptive management plan presented in Table 1 will only apply to the first five years of a 30-year eagle incidental take permit, if one is issued by the FWS. If a permit is issued by the FWS the two parties will revisit the adaptive management plan and revise it as necessary during the first five-year review period required for all long-term IETPs (Table 1).

Because eagle mortalities have been documented at the Project since the start of commercial operations, the Applicant is currently conducting human observer-based informed curtailment to reduce the risk of eagle collisions at the Project, post-construction mortality monitoring, and prey assessments. In addition, at the FWS’s request, the Applicant will purchase and deploy an automated detection and WTG curtailment system to minimize eagle fatalities at the Project. The number and location of the autonomous curtailment units will be determined based on collaboration with the FWS and based on current and future information related to eagle fatalities and site-specific conditions.

Table 1. Summary of Potential Conservation Measures to be implemented if a Threshold is reached using a Stepwise Approach.¹

Step	Conservation Measures	Threshold or Trigger
Step I	Assess eagle fatalities to determine if cause or contributing risk factors can be determined (e.g., nest proximity, weather, presence of prey/carrion) and if management response is warranted and feasible. Consult with the FWS about findings from assessment. Of primary concern is whether common elements between eagle fatalities exist that indicate a more in-depth assessment of the cause of mortality should be performed. If so, perform this more in-depth assessment.	Any eagle is taken
Step II	Implement observational/behavioral studies to further evaluate risk and inform potential conservation measures. Consult with the FWS about: 1) findings from evaluation; and 2) development and implementation of conservation measures if warranted.	To be determined based on authorized take levels. Take is within the authorized limit. Trigger will be determined based on a rate of take that could exceed the authorized take over a five-year period if take continues at the rate identified.
Step III	<p>If threshold is exceeded, the Applicant will consult with the FWS regarding information gained with respect to eagle take experienced to date, to identify causal factors and conservation measures to be implemented as soon as feasible to avoid and minimize further take. Additionally, the Applicant overall take avoidance and minimization program for the subsequent five-year permit review period would be re-evaluated, based on actual results as compared with permitted levels of take, and this stepwise approach will start over with Step I. Examples of conservation measures that may be implemented in consultation with the FWS include, but are not limited to:</p> <ol style="list-style-type: none"> 1. Employ onsite biological monitor(s) during daylight hours at locations and/or times of suspected risk, to further refine the understanding of risk factors. 2. Implement a curtailment program (i.e., human-based or technology-based) specific to the area(s) and/or period(s) of highest collision risk. 3. If a FWS-approved technology is available, deploy and evaluate a detection and deterrent system for eagles approaching area(s) of risk. 4. Other measures agreed upon in consultation with the FWS. 	To be determined based on authorized take levels. Take is within the authorized limit. An additional take would meet the authorized amount under the permit over the five-year period.

¹ Table 1 only applies to the first five years of an IETP if a permit is issued by the FWS.

3.4 Pre-construction Surveys

Western EcoSystems Technology, Inc. (WEST) was contracted to conduct pre-construction eagle surveys within the original Project area in May of 2015. Prior to work by WEST, Wenck Associates, Inc. (Wenck) was contracted to conduct aerial raptor nest surveys in 2014 and Powers Engineers (Powers) was contracted to conduct three months of avian/eagle use surveys from March through May of 2015. Protocols for the pre-construction eagle studies conducted by WEST were developed in communication with the FWS and MFWP. Pre-construction eagle studies were initiated in March of 2015, with over two years (27 months) of eagle use surveys completed through May of 2017 (see Attachment A for further details). In addition, WEST conducted searches for communal bald eagle roosts along the Clarks Fork of the Yellowstone River from public roads outside of the Project area in February of 2016. While biologists recorded limited observations of perched eagles, no communal roosts were identified in the vicinity of the Project during any surveys. The final reports for the survey efforts can be found in the ECP (Attachment A).

Prey base assessments, eagle use and human-informed curtailment, and eagle-focused mortality monitoring studies have been conducted during Project operations that provide additional eagle information (see Attachment A). The FWS, and MFWP have discussed eagle nests in the general area surrounding the Project however, additional nest surveys beyond the 2016 baseline nest surveys have not been conducted for the Project to date.

Prior to permitting and constructing the Project, the Applicant conducted pre-construction avian surveys at the Project, as detailed in the ECP (Attachment A) and Bird and Bat Conservation Strategy (BBCS, Attachment B) and are summarized below.

3.4.1 Eagle Nest Surveys

Wenck Associates, Inc. (Wenck) conducted two aerial fixed-wing nest surveys within the original Project and a surrounding two-mile buffer in 2014 (Attachment A). The first survey was conducted in April and the second survey was conducted in May of 2014. There were no eagle nests identified during these surveys (Attachment A). However, the methods used for the 2014 nest surveys differed from the methods used for nest surveys in 2016 (further described in Attachment A) and as indicated by the 2016 survey results, the results of the 2014 survey are not representative of eagle nesting within a ten-mile buffer of the Project. Based on 2015 eagle nest information provided by MFWP in the vicinity of the Project and in communication with the FWS, additional eagle nest surveys were conducted in 2016. WEST conducted eagle and raptor nest surveys in and surrounding the original Project area in 2016 in accordance with a Project specific nest survey protocol provided by the FWS on December 22, 2015 (*see* Attachment A).

Surveys were conducted by WEST within the original Project area and a surrounding ten-mile buffer in 2016. The nest survey protocol consisted of conducting a total of six visits (four ground surveys and two aerial helicopter surveys) to determine nest occupancy status. Secondary objectives were to determine nest success and productivity. Ground-based surveys were conducted on public lands, on private lands where access was available, and when nests were visible from public lands/roads (method details can be found in Attachment A).

There were no eagle nests identified within the Project area in 2016, however, there were 40 occupied active golden eagle nests and one occupied active bald eagle nest identified within the ten-mile survey area in 2016. To the extent possible, the occupied active eagle nests were revisited throughout the nesting season to determine nest success and productivity. Of the 40 occupied active golden eagle nests identified in 2016, 20 of the nests were determined to be successful and seven nests were determined to be unsuccessful. Success and productivity were undetermined for the remaining 13 occupied active golden eagle nests. The 13 undetermined nests were nests that could not be accessed from the ground, or nests where the chicks may have fledged between surveys and nest fate was unknown. Thirty golden eagle chicks were determined to have fledged, resulting in 1.5 chicks/successful nest, and 1.1 chicks/occupied active nest. The single occupied active bald eagle nest (nest ID #155) was determined to be successful and two chicks were determined to have fledged from the nest in 2016 (*see* Attachment A for further detail).

3.4.2 Bald Eagle Biological Monitoring Results

Project Vicinity Distribution

Nesting bald eagles are found in 51 out of Montana's 56 counties. Through 2014 (the latest statewide information available from the Montana Bald Eagle Working Group), Carbon County had 13 documented bald eagle territories and 20 documented bald eagle nests, all of which were associated with Clarks Fork Yellowstone River (ten miles or more west of the Project) or areas farther west (Montana Bald Eagle Working Group 2016).

The eBird database shows several bald eagle observations at Bear Canyon, approximately four miles east of the Project WTGs, and several records along U.S. Route 310 near the border of Montana and Wyoming, approximately six miles southeast of the Project WTGs (eBird 2020). The next closest bald eagle records are along the Clarks Fork Yellowstone River to the west (eBird 2020). While the eBird data should not be interpreted as full avian use surveys of an area, the data does indicate that the Project is not located in or adjacent to a known concentration area of bald eagles.

In general, the predominant land features and cover within and adjacent to the Project area do not provide high quality bald eagle nesting and foraging resources as the species prefers areas along river corridors where fish resources are abundant, and these features are generally absent from the Project area.

Project-Specific Use and Distribution

Ground-based nest surveys for raptor nests within a ten-mile buffer of the Project were conducted from February 6–21, 2016, with aerial surveys occurring March 18–24 and May 23–25, 2016 and additional follow-up nest monitoring conducted from the ground from April 8–30, June 27–July 2, and July 19–July 22, 2016. Results of the surveys are provided in Attachment A. One active bald eagle nest was documented within the ten-mile buffer of the Project; it is outside of the Project area. No unoccupied bald eagle nests were detected within ten miles. Additional details on the nest surveys conducted in the Project are included in Section 7 of the ECP (Attachment A).

Eagle use surveys occurred at the Project for over two years, from March 2015 through May 2017; an initial study consisting of 36 hours of observation was conducted from March 2015 through May 2015, with a full set of two years (285 hours) of eagle use surveys occurring from June 2015 through May 2017. Consistent with the ECPG, the 12 fixed-point survey plots (800 meter viewshed) that were surveyed for two full years from June 2015 through May 2017 provided coverage of at least 30% of the area within one kilometer of the WTG locations that were proposed at the time the surveys were conducted; however, the plots provided 24% coverage of the area within one kilometer of the final proposed WTG locations. Further, nine of the 12 survey plots overlap the one-kilometer buffer of the final WTG layout. Appendix A of Attachment A contains the full methodology for the use surveys; at every point, the number of individuals, sex, and age class (if possible), distance from plot center when first observed, closest distance, altitude above ground, activity (behavior), flight direction and height, and habitat(s) were recorded for each eagle observation.

During the year one surveys conducted from June 2015 through May 2016, two bald eagles were observed and only one of those was observed for one minute within the 800 meter viewshed and below 200 meter in elevation; the second bald eagle was observed outside the 800 meter viewshed. The bald eagles were recorded during the winter and spring seasons. The year one average bald eagle use estimate at the Project was less than 0.01 bald eagles/plot/60 min survey. Additional details on the eagle use surveys conducted in the Project are included in Section 7 of the ECP (Attachment A).

Eagle migration surveys were conducted between September 21 and November 7, 2015, for a total of 280 hours of survey effort. Point counts were conducted from a survey point location in the northwest portion of the Project that was selected to maximize visibility. No bald eagles were documented in the 280 hours of surveys conducted during this peak migration period.

The results of the surveys indicate generally low bald eagle use in the Project with only four bald eagle flight minutes recorded within 800 meters and below 200 meters from the nine survey plots that overlap the one-kilometer buffer of the final WTG layout. Use was limited to spring (March 15 through May 31) and winter (November 15 through March 14) in year one and winter (November 18 through March 14) in year two. Additional details on the results of the eagle use surveys can be found in the ECP (Attachment A).

3.4.3 Golden Eagle Biological Monitoring Results

Project Vicinity Distribution

Montana natural heritage data includes records of three historic golden eagle nest sites within ten miles of the Project area.

The eBird database shows several golden eagle observations within or directly adjacent to the Project (eBird 2020). More observations of golden eagles occur along the Clarks Fork Yellowstone River approximately ten miles to the west. While the eBird data should not be interpreted as full avian use surveys of an area, the data does indicate that golden eagles are regularly observed in the vicinity of the Project.

In general, the predominant land features and cover within and adjacent to the Project area, including the bluffs, cliffs, and open range, do provide golden eagle nesting and foraging habitat.

Project-Specific Use and Distribution

As stated above, ground-based surveys for raptor nests were conducted within a ten-mile buffer of the Project from February 6–21, 2016, with aerial surveys occurring March 18–24 and May 23–25, 2016 and additional follow-up nest monitoring conducted from the ground from April 8–30, June 27–July 2, and July 19–July 22, 2016 (Attachment B).

Forty active golden eagle nests were documented within the ten-mile buffer of the Project; none of the nests are inside the Project area. No unoccupied golden eagle nests were documented within the Project boundary; 99 unoccupied nests were documented within the ten-mile buffer. The mean inter-nest distance for these nests was determined to be approximately 2.6 mi, with the half mean inter-nest distance being approximately 1.3 miles. According to the 2013 FWS ECPG, nests should be buffered by half the mean inter-nest distance to represent an approximated territory size surrounding the nest. No WTGs in the final layout are within the half mean inter-nest distance of any eagle nests. Additional details on the nest surveys conducted in the Project are included in Section 7 of the ECP (Attachment A).

During the year one of eagle use surveys from June 2015 through May 2016, 53 golden eagles were observed; golden eagles were recorded during every season, with observations occurring in every month except August and December. The highest use was in the spring (0.17 birds/800-meter plot/60-minute survey), followed by winter (0.08), fall (0.07) and summer (0.06). Irrespective of distance from observer, flight height, and including observations of perched birds, golden eagles were observed for 672 minutes during the year of surveys. Golden eagles were recorded flying within 800 meters and below 200 meters in height for 47 minutes during the first year of surveys: 24 minutes during the winter, 13 minutes during the spring, seven minutes in the fall and three minutes during the summer. Additional details on the eagle use surveys conducted in the Project are included in Section 7 of the ECP (Attachment A).

During year two of eagle use surveys from June 2016 through May 2017, 42 golden eagles were observed; golden eagles were recorded during every month, with the lowest observations in April and October. The seasonal use pattern was different than in year one, with the highest use in the winter (0.15 birds/800-meter plot/60-minute survey), followed by fall (0.10), summer (0.04), and spring (0.03). Irrespective of distance from observer, flight height, and including observations of perched birds, golden eagles were observed for 697 minutes during the second year of surveys. Golden eagles were recorded flying within 800 meters and below 200 meters in height for 50 minutes during the second year of surveys: 28 minutes during the winter, 14 minutes during the fall, six minutes in the summer, and two minutes in the spring (Attachment A).

As stated above, consistent with the ECPG, the 12 fixed-point survey plots that were surveyed for two full years from June 2015 through May 2017 provided coverage of at least 30% of the area within one kilometer of WTG locations that were proposed at the time the surveys were conducted; however, the plots provided 24% coverage of the area within one kilometer of the final WTG locations. Further, nine of the 12 survey plots overlap the one-kilometer buffer of the

final proposed WTG layout, with 54 golden eagle flight minutes recorded within 800 meters and below 200 meters from the nine survey plots.

During the fall migration surveys that occurred between September 21 and November 7, 2015, 93 golden eagles within 77 groups were observed. Overall mean golden eagle use during the eagle migration survey was approximately 0.33 golden eagles per hour (irrespective of distance from observer). Most eagle observations occurred between the hours of 11:00 a.m. and 4:00 p.m. Golden eagle use observations were higher in October compared to September and November. Additional details on the eagle migration surveys conducted in the Project are included in Section 7 of the ECP (Attachment A).

The results of the surveys indicate that golden eagles occur in the Project throughout the year, with annual use being relatively consistent across the two years of use surveys (0.10 golden eagles/800-meter plot/60-minute survey in year one and 0.09 golden eagles/800-meter plot/60-minute survey in year two). Seasonal patterns were different between year one and year two, with spring having the highest use and summer having the lowest use in year one, and winter having the highest use and spring having the lowest use in year two. An examination of documented golden eagle flight paths over the two years of use data indicate that the golden eagles appear to generally be utilizing areas with more abrupt topographic features, which are largely found on the periphery or outside of the Project boundary. Additional details on the results of the eagle use surveys can be found in the ECP (Attachment A).

3.5 Post-Construction Surveys

At the Applicant's request, WEST has conducted three years of post-construction mortality monitoring for the Project, from January 2021 through August 2024. The post-construction surveys that provide eagle data for the Project include eagle biomonitoring, standardized eagle mortality monitoring, and eagle nest surveys.

3.5.1 Eagle Biological Monitoring and Informed Curtailment

To reduce the risk of eagle collisions at the Project, the Applicant decided to perform human-informed curtailment seven months after commercial operations began. At the Applicant's request, WEST started conducting eagle use surveys and informed curtailment at the Project in October 2021. Curtailment activities are ongoing at the Project.

Eagle use surveys were performed to collect data on spatial and temporal use by eagles throughout the Project. Three permanent monitoring points were established across the Project to maximize survey coverage. One point is surveyed every day, seven days per week, for four hours. Points are rotated daily with the daily start time changing to account for varying degrees of eagle use throughout daylight hours. The survey area consisted of all flight paths and observations for eagles recorded within a visible distance and reported within a 16,400 foot (2,500 meter) viewshed. Informed curtailment is conducted concurrently with the four-hour eagle use surveys. Curtailment data are recorded daily by zone and total time curtailed. Wind turbine generators are grouped into 26 zones of two to seven WTGs, and all WTGs within the individual zones are curtailed simultaneously. The surveyors initiate zone curtailment if:

1. Eagle(s) are observed within 800 meters of a WTG or zone of WTGs.
2. Eagle(s) flight paths are reasonably likely to cross through or near WTG and/or zones based on observed heading or assumed trajectory.
3. Eagle(s) are observed actively foraging within or near WTGs or zones of WTGs.
4. Any other behavior is observed in which the surveyor believes it is reasonably likely that an eagle was moving toward a potential collision with a WTG.
5. The surveyor monitors eagle activity while the bird is within sight or until a higher priority risk is observed. The surveyor releases the WTGs from curtailment when the eagle risk is reduced to an acceptable level as determined by the biologist's professional judgement and after at least 15 minutes had passed.

3.5.2 Mortality Monitoring

In coordination with the FWS, three years (2021 through 2023) of standardized eagle mortality monitoring have been implemented at the Project to provide a means of measuring the amount of eagle take that occurs. Surveys included all the WTGs within the Project area (114 WTGs) using the FWS's ECPG (FWS 2013). There have been 13 eagle mortalities recorded at the Project since commercial operation of the facility began. Seven eagles were found at the Project in 2021, five were found outside of scheduled searches and two were found during scheduled searches. Three eagles were found during the 2022 survey year with all three eagles being reported outside of scheduled searches. Two eagles were found at the Project during the 2023 survey year, with both eagles being reported outside of scheduled searches. As of August 22, 2024, one eagle was found at the Project during the 2024 survey year (see Attachment A).

3.6 Migratory Birds

General information on migratory birds protected under the MBTA is discussed in Section 3.5.1 of the PEIS (FWS 2016c, pages 97-98) and is incorporated by reference herein. Species most likely to be affected by our permit decisions evaluated for this Project are those that might benefit from the mitigation options developed in the ECP. Additionally, the Project has a MBTA 21.27 Special Purpose Utility permit, and no further analysis will occur.

3.6.1 Species Listed under the Endangered Species Act

The ESA directs the FWS 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.

On February 27, 2024, the FWS initiated an intra-service Section 7 consultation for the issuance of an IETP for the Project (Attachment C). It was determined that issuance of an IETP for the Project would have "no effect" on the federally listed grizzly bear (*Ursus arctos horribilis*) and one candidate species, the monarch butterfly (*Danaus plexippus*).

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 FWS's decision of whether to issue the IETP.

3.7 Cultural and Socio-economic 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 consider 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 (54 U.S.C. § 300308). The criteria used to evaluate the National Register of Historic Places (NRHP) eligibility of properties affected by federal agency undertakings are contained in 36 C.F.R. § 60.4.

No new ground-disturbing activities will occur as part of or related to issuing the IETP. Eagles can be considered a feature or element of a Traditional Cultural Property (TCP) pursuant to federal regulations (50 C.F.R. pt. 22.22). 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. The IETP will include permit conditions to ensure all recoverable eagle remains, parts, and feathers are sent to the National Eagle Repository and could then be used for Native American cultural and religious purposes. In addition, some tribes and tribal members may consider eagle nests sacred sites (or TCPs) or potential historic properties of religious and cultural importance, as provided for in the American Indian Religious Freedom Act (42 U.S.C. § 1966). Section 1.4.1 described 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.

3.8 Climate Change

Climate change was considered in the PEIS (FWS 2016c; Section 3.9, page 144) and is incorporated herein by reference. The proposed action, of issuing an IETP, 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 on whether to issue an IETP.

4. Environmental Consequences

This section summarizes the effects on the environment of implementing the proposed action and the no action alternative. The discussion of overall effects of the IETP program is provided in the PEIS (FWS 2016c) and is incorporated by reference here. This section of this EA analyzes only the effects that were not analyzed in the PEIS that may result from the issuance of the 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 (FWS 2016c) and the FWS's 2016 report, "*Bald and Golden Eagles: Population Demographics and Estimation of Sustainable Take in the United States*" (FWS 2016a). We also used our eagle-risk analysis (FWS 2013), and Cumulative Effects Analysis (FWS 2013) to quantify eagle fatality risk and cumulative LAP-level effects.

Under the proposed action, we estimate that up to 1.54 bald eagles could be taken annually at the Project (47 over the 30-year life of the permit). Taken together, this Project's take with overlapping take of the other projects could result in a total annual take of 1.54 bald eagles (or 0.24% of the LAP). The impacts to bald eagle populations at both the LAP and EMU scales are, therefore, not significant.

Under the proposed action, 2.61 golden eagles are estimated to be taken annually (79 over the 30-year life of the permit). Taken together, this Project's take with overlapping take of the other projects could result in a total annual take of 3.51 golden eagles (or 0.24% of the LAP). However, the golden eagle take that would be authorized by the permit would be fully offset by the compensatory mitigation that would be provided by the Applicant and would not significantly impact local area eagle populations. To fully offset the authorized take of 79 golden eagles over the 30-year period, the Applicant will retrofit high-risk power poles at a 1.2 to 1 ratio to ensure regional eagle populations are maintained consistent with the preservation standard (Eagle Permits; Revisions to Regulations for Eagle Incidental Take and Take of Eagle Nests, 81 Fed. Reg. 91494; December 16, 2016). Power pole electrocution has been shown to cause a significant number of eagle mortalities (APLIC 2006). Therefore, retrofitting high-risk electric poles is an effective way to minimize mortalities in eagle populations (FWS 2013). Retrofits are also an effective and quantifiable compensatory mitigation measure that may be used to offset any mortalities that may occur as a result of operation of a project.

The take that would be authorized by this permit will be offset by the compensatory mitigation provided by the Applicant, so will not significantly impact the EMU eagle population. The avoidance and minimization measures and additional adaptive management measures that would be required under the permit are designed to further ensure that the permit is compatible with the preservation of the golden eagle 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 FWS analyzed in the PEIS (FWS 2016c) 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% of a LAP, nor can cumulative unauthorized take exceed 10% of a LAP, unless the FWS can demonstrate why allowing take to exceed that limit is still compatible with the preservation of eagles (Eagle Permits; Revisions to Regulations for Eagle Incidental Take and Take of Eagle Nests, 81 Fed. Reg. 91494; December 16, 2016). Permit regulations require the FWS to conduct an individual LAP analysis for each IETP application as part of our application review.

This analysis, therefore, considers cumulative effects to the LAP surrounding the Project to evaluate whether the take to be authorized under this IETP, together with other sources of

permitted take and unpermitted eagle mortality, may be incompatible with the persistence of the Project LAP. Data provided by the Applicant, FWS data on other eagle take authorized and permitted by the FWS, and other reliably documented unauthorized eagle mortalities were used to estimate cumulative impacts to the LAP. The scale of our analysis is an 86-mile (138 kilometer) radius for bald eagles and 109-mile (175-kilometer) radius for golden eagles around the Project area. The cumulative effects analysis was conducted as described in the FWS's ECPG (FWS 2013).

Given these estimates, the proposed action is consistent with 50 C.F.R. § 22.80(a), 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.”

4.1.1 Estimating Eagle Fatalities

The FWS's CRM uses pre-construction eagle use of a wind facility (eagle exposure), the probability that an eagle collides with a WTG (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, improving estimates of annual eagle fatalities at a wind facility. The expansion factor may also be adjusted based on applicant-provided operational daylight hour data collected during monitoring years (New et al. 2015). To estimate bald and golden eagle fatalities for this Project, we used the pre-construction eagle-use survey data to update the exposure priors in the CRM. Bald eagle fatality estimates presented in this document represent the 60th quantile and annual golden eagle fatalities represent the 80th quantile.

4.1.2 Estimated Bald Eagle Take

Under the proposed action, we estimate that up to 1.54 bald eagles could be taken annually at the Project, over the life of the IETP (i.e., 30 years). This number is multiplied by the number of years in the permit term (30 years) and rounded up to the next whole number (for a total authorized take of up to 47 bald eagles over the life of the 30-year permit. 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 above and in the ECP, will be used to guide the implementation of conservation measures as needed, and apply before actual take exceeds the permitted take levels.

The eagle fatality monitoring associated with this alternative will be determined by the FWS (e.g., evaluating all WTGs during a monitoring year), which will allow the FWS to estimate the total number of annual eagle fatalities at the Project. Monitoring is a critical component of adaptive management. Together, these conservation measures ensure there will be no significant impacts to bald eagles. The take of bald eagles that would be authorized by this IETP 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, or other forms of FWS-approved compensatory mitigation, 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 FWS recommends that the Applicant implement it within the golden eagle LAP related to the Project.

Under the proposed action, the FWS may formally determine that the Applicant may reduce or eliminate the biomonitoring and curtailment program, provided that take remains below the permitted level and that there are no active eagle nests requiring monitoring and curtailment. The Applicant would then use monitoring and adaptive management to ensure that eagle take remains within permitted levels. In communication with the appropriate agencies, the Applicant will discuss the need for and implementation of mitigation or experimental advanced conservation practices (ACPs) if it is determined that eagle take is higher than anticipated based on eagle take estimates. A stepwise process will be used to guide the implementation of additional conservation measures as needed (Attachment A). Together, the monitoring and conservation measures aim to ensure there will be no significant impacts to the bald eagle population.

4.1.3 Estimating Golden Eagle Take

Under the proposed action, we estimate that up to 2.61 golden eagles could be taken annually at the Project. This number is multiplied by the number of years in the permit term (30 years) and rounded up to the next whole number (for a total authorized take of up to 79 golden eagles over the life of the 30-year permit). These estimates are based on a conservative approach that is expected to overestimate annual and cumulative take at the outset of the IETP. 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 ECP, will be used to guide the implementation of additional conservation measures as needed, and apply before actual take exceeds the permitted take levels (Attachment A).

The eagle fatality monitoring associated with the proposed action will be evaluated and analyzed by the FWS (e.g., evaluating all WTGs during a monitoring year), which will allow the FWS and permittee to estimate the total number of annual eagle fatalities. Monitoring is a critical component of adaptive management.

To fully offset the authorized take of golden eagles, the Applicant will retrofit high-risk power poles, or another form of compensatory mitigation if approved by the FWS in the future, proportional to the predicted and adjusted take estimate. Together, these conservation and mitigation measures ensure there will be no significant impacts to golden eagle populations.

Under the proposed action, the FWS may formally determine that the Applicant may reduce or eliminate the biomonitoring and curtailment program, provided that take remains below the permitted level and that there are no active eagle nests requiring monitoring and curtailment. The Applicant would then use monitoring and adaptive management to ensure that eagle take remains within permitted levels. In communication with the appropriate agencies, the Applicant will discuss the need for and implementation of mitigation or experimental ACPs if it is determined

that eagle take is higher than anticipated based on eagle take estimates. A stepwise process will be used to guide the implementation of additional conservation measures as needed (Table 1).

4.2 Cumulative Effects

Take of eagles has the potential to affect the larger eagle population. Accordingly, the PEIS 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 FWS determined sustainable limits to permitted take of bald and golden 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 (FWS 2016c). Golden eagle take being considered under this application would require mitigation, described in further detail below. The avoidance and minimization measures and compensatory 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 FWS's PEIS analyzed the amount of take that can be authorized while still maintaining the LAP of eagles. To issue an IETP, cumulative authorized take should not exceed 5%, and cumulative unauthorized take should not exceed 10% of a LAP, unless the FWS can demonstrate why allowing take to exceed that limit is still compatible with the preservation of eagles. The IETP regulations require the FWS to conduct an individual LAP analysis for each IETP 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 FWS, and other reliably documented unauthorized eagle mortalities (including both anthropogenic and natural causes) to estimate cumulative impacts to the LAP. The scale of our analysis is an 86-mile radius around the Project site for bald eagles and a 109-mile radius for golden eagles (Figure 3) around the Project site for permitted take. When conducting the unauthorized take analysis in the Project LAP, we used eagle mortality records (years of tracked unpermitted take) from the FWS's database within two times the average species-specific natal dispersal distance between the years of 2001–2023 for bald eagles and 1995–2024 for golden eagles. This distance was used because it is the largest distance within which an eagle mortality would be expected to affect the LAP in question, making it a conservative way to inform this analysis. We conducted our Cumulative Effects Analysis as described in the FWS's ECPG (2013). No permitted projects overlap the LAP for bald eagles and four permitted projects overlap the LAP for golden eagles.

4.2.1 Bald Eagle

The LAP of bald eagles for the Project is approximately 660 eagles and the annual 1% and 5% benchmarks for this LAP are approximately seven and 34 bald eagles, respectively. Estimated annual take of 1.54 bald eagles represents 0.24% of the LAP. There are no projects currently permitted for disturbance take that overlap this Project's LAP boundary for bald eagles. Taken together, this Project's take with overlapping take of other projects could result in a total annual take of 1.54 bald eagles (or 0.24% of the LAP). The overlapping LAPs effect is discussed in more detail in the Section 4.2.4 (Reasonably Foreseeable Future).

Based on the FWS's eagle mortality database (which tracks sources of unpermitted take), there were 52 reported bald eagle mortalities within the LAP between 2001 and 2023 for an average of 2.26 per year. These mortalities are all considered to be unpermitted take. Of the 52 mortalities, 12 deaths resulted from unknown causes, ten were due to non-anthropogenic causes, and the remaining 30 were due to anthropogenic causes (e.g., electrocution, shooting, poisoning). On an annual basis, 2.26 unpermitted bald eagle takes equals approximately 0.34% of the total estimated bald eagle population in the LAP associated with the Project. This amount of unpermitted take is below the 10% threshold level for unpermitted take within the LAP.

The impacts to bald eagle populations at both the LAP and EMU scales are, therefore, not significant. Analyses conducted by the FWS showed that over most of the United States, bald eagle populations are growing at a rate of approximately 5% per year (FWS 2016c). Additionally, a recently published report (FWS 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 FWS (2020) concluded that the bald eagle population has continued to increase rapidly since our previous survey. Based on this information and rationale, 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.

4.2.2 Golden Eagle

The LAP of golden eagles for the Project is approximately 1,454 eagles and the 1% and 5% benchmarks for this LAP are 15 and 73, respectively. Estimated annual take of 2.61 golden eagles represents 0.18% of the LAP. There are two currently permitted wind energy projects that overlap the Project's LAP boundary for golden eagles, along with two short-term projects with a permit. Taken together, the take of the Project and overlapping take of the other permitted projects could result in a total annual take of 3.51 golden eagles (or 0.24% of the LAP). The overlapping LAP's effect is discussed in more detail in Section 4.2.4 (Reasonably Foreseeable Future).

Based on the FWS's eagle mortality database, there were 529 reported golden eagle mortalities within the LAP between 1995 and 2024, for an average of 17.63 per year. These mortalities are all considered to be unpermitted take. Of the 529 mortalities, 33 deaths resulted from unknown causes, 17 were due to non-anthropogenic causes, and the remaining 479 were due to anthropogenic causes (e.g., electrocution, shooting, poisoning, collision with WTGs). On an annual basis, 17.63 unpermitted golden eagle takes equals approximately 1.21% of the total golden eagle population in the LAP associated with the Project. This amount of unpermitted take is below the 10% threshold level for unpermitted take within the LAP.

The most recent golden eagle populations data was published in 2022 and indicates that the current golden eagle population size in the western United States is approximately 31,800 individuals. This number suggest that the golden eagle population is stable, though additional take may not be sustainable unless mitigated for (Millsap et al. 2022). Because all golden eagle take would be offset by compensatory mitigation, the effects of the estimated take related to this project are not anticipated to have a significant impact on the golden eagle populations in this EMU. The impacts to golden eagle populations at both the LAP and EMU scales are therefore not significant and the Project would not contribute to declines in the overall golden eagle population in the EMU and still meets the preservation standard.

4.2.3 Summary of Cumulative Effects on Bald and Golden Eagles

The FWS considered several alternatives for benchmark harvest rates at the LAP scale, and after comparative evaluation identified take rates of between 1% and 5% of the estimated total eagle population size at this scale as not significant, with 5% being at the upper end of what might be appropriate under the Eagle Act preservation standard, whether offset by compensatory mitigation or not. These local-area harvest rate benchmarks are overlain by the more conservative take thresholds for the EMUs, so the overall harvest rate at the EMU scale should not exceed levels established in the Final EA (FWS 2009).

The 2016 PEIS (FWS 2016c), incorporated herein by reference, analyzed the cumulative effects of permitting take of eagles in combination with ongoing unauthorized sources of human-caused eagle mortality and other present or foreseeable future actions affecting eagle populations. As part of the analysis, the FWS determined sustainable limits to permitted take within each EMU. The authorized take for bald eagles does not exceed the EMU level for bald eagles. Take limits for golden eagles in all EMUs are set to zero; therefore, all permits for golden eagle take must incorporate offsetting compensatory mitigation after all appropriate and practicable avoidance and minimization measures are applied.

The take of golden eagles that would be authorized by this IETP will be offset by commitments from the Applicant to retrofit high-risk power poles, or other forms of FWS-approved compensatory mitigation, 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. The avoidance and minimization measures and additional adaptive management measures that would be required under the IETP are designed to further ensure that the IETP is compatible with the preservation of eagles at the regional EMU population scale.

4.2.4 Reasonably Foreseeable Future

General impacts within a distance of two times the Project LAP are examined to include information from all LAP boundaries that overlap the Project LAP boundary. As described briefly above, the FWS has issued two long-term IETPs and two short-term IETPs for golden eagles with at least partial overlap of the Project’s LAP boundaries.

The FWS is aware of operational wind projects with overlapping LAP boundaries that have contributed to unauthorized take of bald and golden eagles. 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 FWS 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 Comparison of Effects of Alternatives

Table 2 compares the effects of the proposed action and alternative I.

Table 2. Comparison of the Effects of the No Action and the Proposed Action Alternative.

	Proposed Action – Issue Permit	Alternative 1 – No Action
Eagle Take Levels	Up to 47 bald eagle and 79 golden eagles over 30 years at the Project. In practice we anticipate lower take levels due to avoidance and minimization actions which will be required under the permit.	Up to 47 bald eagle and 79 golden eagles over 30 years at the Project.
Unmitigated Eagle Take	Zero	Up to 47 bald eagles and 79 golden eagles over 30 years.
Compensatory Mitigation	The Applicant has committed, and will be required, to retrofit up to 870 high-risk power poles, or another form of compensatory mitigation, 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.	None
Avoidance and Minimization	Project is operational and will continue to operate.	Project is operational and will continue to operate.
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 FWS	Annual monitoring report of fatalities; reporting of injured and dead eagles; information on the effects of specific and applied conservation measures.	Reporting of injured and dead eagles.
Company Liability for Eagle Take	No (if in compliance with permit conditions).	Yes

5. Mitigation and Monitoring

5.1 Bald Eagles

The proposed action incorporates measures to minimize and avoid take to the maximum degree practicable, as required by regulation. To ensure that regional eagle populations are maintained consistent with the preservation standard, FWS's regulations require that any take that cannot practicably be avoided and is above EMU take limits must be offset by compensatory mitigation (FWS 2016a). 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 for golden eagle take offset will likely benefit bald eagles and will be in the Central Flyway EMU. The actual location of the compensatory mitigation has not been determined; however, the FWS recommends that the Applicant implement it within the golden eagle LAP related to the Project.

5.2 Golden Eagles

The proposed action incorporates measures to minimize and avoid take to the maximum degree practicable, as required by regulation (50 C.F.R. § 22.26). 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, compensatory mitigation is necessary to offset any authorized take of golden eagles (FWS 2016c). The Applicant will retrofit high-risk power poles, or another form of FWS-approved compensatory mitigation, 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 FWS, according to protocols consistent with FWS's national guidelines, as outlined in the terms and conditions of the IETP. After the five-year check-in period as required by permit conditions, the FWS will review the eagle mortality data and other pertinent information, as well as information provided by the Applicant and independent third-party monitors. The FWS 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 that eagle take has not exceeded the amount authorized within that time frame. We will update fatality estimates, 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, and based on the observed levels of take using approved protocols for monitoring and estimating total take, the FWS 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.

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