Appendix 4. Review of Conformance with Pre-Construction Survey Protocols

Review of Conformance with Pre-Construction Eagle Use Survey Protocols

Included below is a specific list of pre-construction survey requirements included in the revised 2016 eagle permit rule. The revised eagle permit rule requires implementation of survey and monitoring protocols that are "Service-approved." However, the requirements could be specifically waived if approved by the USFWS.

Specific requirements of pre-construction surveys and application data requirements described in the rule change are summarized in Table 1, along with descriptions of how the surveys performed to-date at the Apple Blossom Wind Project (Project) conform with these specifications. Table 1 focuses on the surveys being used for input into the USFWS Bayesian Collision Risk Model, namely the following surveys:

- 2011 Late Fall Waterfowl and Raptor Migration Surveys
- 2012 Eagle Winter Use Surveys
- 2013/2014 Eagle Use Surveys

As documented in Table 1, these pre-construction surveys conducted at the Project substantially comply with the protocols listed in the Eagle Conservation Plan Guidance ECPG. However, because the studies began in 2011, two years prior to publishing the final ECPG and five years before the 2016 Eagle Rule, not all measures were followed in all of the surveys. Because the surveys were done prior to finalization of the protocol, and because the studies and preparation of the ECP for the Project have been developed through coordination with the USFWS since 2009 (in particular, multiple meetings and conference calls have been held with the USFWS starting in 2013 after the ECPG was finalized in order to discuss eagle survey methodologies), the Applicant requests that the USFWS document that this Project qualifies for a waiver from strict conformance with the ECPG protocols.

Table 1. Summary of Pre-construction Survey and Application Package Requirements

Requirement	Conformity with Eagle Rule/ECPG	Notes
Pre-construction Survey Requirements		
Conducting eagle surveys and small bird surveys separately, to avoid overlooking large birds while searching at a much smaller scale for small songbirds	Conform	Surveys conducted at the Project separated large bird surveys from small bird surveys. In 2011, separate passerine surveys were conducted, and those survey results are not being used in the Bayesian collision risk model for eagles. Other surveys in 2011 and 2012 either focused on large birds (waterfowl and raptors) or were eagle specific. The final year of surveys in 2013/2014 were eagle only surveys
Using trained observers that are capable of accurate bird identification and distance estimation	Conforms	None
Distributing surveys across daylight hours (e.g., morning: sunrise to 1100 hours; midday: 1101–1600 hours; evening: 1601 hours to sunset), and by designing surveys to more intensively cover the midday period in areas where eagle flight is more likely at that time of day	Conforms	None
Conducting surveys under all weather conditions except when visibility is less than 800 meters (m) horizontally and 200 m vertically.	Conforms	None
Surveys must consist of point-based recordings of bald eagle and golden eagle flight activity (minutes of flight) within a three-dimensional cylindrical plot (the sample plot). The radius of the sample plot is 2,625 feet (ft) (800 meters (m)), and the height above ground level must be either 656 ft (200 m) or 82 ft (25 m) above the maximum blade reach, whichever is greater.	Conforms	None

Requirement	Conformity with Eagle Rule/ECPG	Notes
The duration of the survey for each visit to each sample plot must be at least 1 hour.	Partially conforms	The 2011 and 2012 waterfowl/raptor and eagle surveys were 30-minute surveys. The 2013/2014 surveys were all 60 minutes
Sampling must include at least 12 hours per sample plot per year for 2 or more years.	Partially conforms	Surveys at points that have 800-m survey areas that overlap a 1-km buffer of the Project were conducted November 2011 – February 2012, and August 2013 – April 2014, for a total of 11 months. The approach and timeline to the final set of eagle only surveys from August 2013 – April 2014 were developed through coordination with the USFWS
Each sample plot must be sampled at least once per month, and the survey start time for a sampling period must be selected randomly from daylight hours.	Partially conforms	Surveyed points in 2011 – 2012 were not surveyed once a month, while the points surveyed in 2013 – August 2014 were surveyed once per month from August – April. Although not selected purely randomly, survey start times were shifted to different survey points to provide a variety of survey times at each point throughout the year.
Sampling design must be spatially representative of the project footprint, and spatial coverage of sample plots must include at least 30 percent of the project footprint.	Conforms	None
Sample plot locations must be determined randomly.	Does not conform (see notes)	Sample plot locations were selected to be: spatially representative of the project site, provide clear fields of vision of the 800-m survey plot, and be reasonably accessible to the surveyor. Following these criteria, survey plots were not necessarily chosen at random

Requirement	Conformity with Eagle Rule/ECPG	Notes
Application Package Requirements		
The radius and height of each sample plot.	Conforms	The ECP/permit application will be updated to include this information
The proportion of each three-dimensional sample plot that was observable from the sample point for each survey.	Conforms	The ECP/permit application will be updated to include this information
Dates, times, and weather conditions for each survey, to include the time surveys at each sample point began and ended.	Conforms	This information has been provided to the USFWS in email correspondence. The ECP/permit application will be updated to formally include this information
Information for each survey on the number of eagles by species observed (both in flight and perched), and the amount of flight time (minutes) that each was in the sample plot area.	Conforms	This information has been provided to the USFWS in email correspondence. The ECP/permit application will be updated to formally include this information
The number of proposed turbines and their specifications, including brand/model, rotor diameter, hub height, and maximum blade reach (height), or the range of possible options.	Conforms	This information has been provided to the USFWS in email correspondence. The ECP/permit application will be updated to formally include this information
Coordinates of the proposed turbine locations in decimal degrees (specify projection/datum), including any alternate sites.	Conforms	This information has been provided to the USFWS in email correspondence. The ECP/permit application will be updated to formally include this information