

## **APPENDIX B – REVIEW OF CONSISTENCY WITH PRE-CONSTRUCTION SURVEY PROTOCOLS**

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## **Appendix B**

### **Review of Consistency 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 rules. The comparison table shows the status of the surveys in relation to these requirements that were completed at the Red Pine Wind Project (Project).

The revised eagle permit rules requires implementation of survey and monitoring protocols that are “Service-approved.” Generally, we assume this means strict adherence to the survey protocols described in Appendix C and D of the Eagle Conservation Plan Guidance (ECPG). However, the requirements could be specifically waived if approved by the U.S. Fish and Wildlife Service (USFWS). Specific requirements of pre-construction surveys and application data requirements described in the rule change are summarized below in Table 1, along with descriptions of how the surveys done for the Project comply.

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

Requirement	Status for Red Pine Wind Project	Notes
<i>Pre-construction Survey Requirements</i>		
Conducting eagle surveys and small bird surveys separately, to avoid overlooking large birds while searching at a much smaller scale for small songbirds	Not consistent in 2013/2014 surveys.  Consistent in 2015 – 2016 survey	For Red Pine, large bird and small bird surveys overlapped for some of the surveys, particularly those conducted in 2013/2014. Surveys were always done with an emphasis on collecting information on eagle use. Although some small bird data were recorded, this did not distract from the collecting of large bird data, and whenever eagles were seen those became the focus of the survey. The final year of surveys from December 2015 through November 2016 were eagle only surveys.
Using trained observers that are capable of accurate bird identification and distance estimation	Consistent	
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	Consistent	
Conducting surveys under all weather conditions except when visibility is less than 800 meters (m) horizontally and 200 m vertically.	Consistent	

Requirement	Status for Red Pine Wind Project	Notes
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 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.	Consistent	
The duration of the survey for each visit to each sample plot must be at least 1 hour.	Consistent	
Sampling must include at least 12 hours per sample plot per year for two or more years.	Partially consistent	Surveys at 15 of the survey points within the final Project boundary were conducted at least once a month for two full years. Due to a Project boundary change that occurred after the first year of surveys (2013/2014), eleven additional survey points in the final Project boundary were surveyed for less than two years; these were surveyed at a monthly basis during 2015/2016.
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 consistent	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.	Partially consistent	Both the 2013/2104 and 2015/2016 surveys were designed so that the sample plots covered 30% of the Project boundary at the time of the survey start. The Project boundary was used because the turbine layout (and therefore final Project footprint) was not known. Since the completion of the surveys, the Project boundary was shifted to the west in respose to high eagle use in the eastern side of the Project and to increase the setbacks from known nests. Due to Project boundary and layout changes that occurred in February 2016 and again in November 2016, the survey points cover less than 30% of the final 1-km buffer of proposed Project turbines (they cover 27%).

Requirement	Status for Red Pine Wind Project	Notes
Sample plot locations must be determined randomly.	Not consistent	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.
<i>Application Package Requirements</i>		
The radius and height of each sample plot.	Consistent	The ECP/permit application included this information
The proportion of each three-dimensional sample plot that was observable from the sample point for each survey.	Consistent	The ECP/permit application included this information
Dates, times, and weather conditions for each survey, to include the time surveys at each sample point began and ended.	Consistent	The ECP/permit application included 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.	Consistent	The ECP/permit application included 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.	Consistent	The ECP/permit application included this information
Coordinates of the proposed turbine locations in decimal degrees (specify Projection/datum), including any alternate sites.	Consistent	The ECP/permit application included this information

As documented above in Table 1, the pre-construction surveys conducted at the Project adhere largely with the protocols listed in the ECPG. However, because the studies began in 2013, three years before the 2016 Eagle Rule, and due to multiple Project boundary changes, not all measures were followed in all of the surveys.

On December 1, 2017, the Service issued a [Memorandum signed by Assistant Director Jerome Ford](#) (FWS/AMB/067089) which lists three categories of Projects that qualify for a waiver. One of these categories includes Projects that were not operational prior to January 1, 2017, but for which construction schedules and/or contractual obligations prior to January 17, 2019 prevented the Project from completing a full two years of survey that meet all of the requirements of the Eagle Rule. The Project Owner has coordinated with the USFWS on the approach to eagle use and eagle nest survey efforts at this Project, all of which were completed prior to January 1, 2017. The Project Owner had a contractual obligation at Red Pine to start operations by the end of 2017, meaning that construction had to start in spring 2017. It therefore would not have been possible to complete two years of pre-construction surveys that met all of the criteria that were required in the 2016 Eagle Rule. Therefore, the Project Owner asserts the Project specifically qualifies for a waiver as outlined in the Memorandum.