Appendix E

Horse Butte Wind Programmatic Eagle Take Permit
Pole Selection Criteria

(Redactions protect company names)

Background:

The Pole Selection Criteria described below is excerpted from a report compiled by Hawkwatch International at the request of Utah Associated Municipal Power Systems (UAMPS) in furtherance of the requested programmatic take permit for the Horse Butte Wind Facility.

Pole Selection Criteria:

Golden Eagle mitigation site selection characteristics: (developed for GIS based on preferred habitat characteristics as reported in BNA species account [Kochert et al. 2002] and suggestions from APLIC [2006]) Scores will be out of 10, with the maximum score for this analysis being 6, because information regarding mortality, use of poles or nesting is not available.

1. Any pole with historical Golden Eagle mortality that is currently not "avian safe" will be automatically considered high risk.
2. Any pole with greater than 10 habitat types located within 1km will be given 1 point.
3. Any pole with greater than 50% abundance of suitable Golden Eagle habitat within 1km will be given 1 point (for suitability rankings see Appendix A).
4. Any pole with greater than 25% abundance of high-quality Golden Eagle habitat will be given 2 points.
5. Poles located on significant ridge will be given 1 point (Note: poles located in bottomlands).
6. Poles within 4km of known active Golden Eagle nests will be given 2 points
7. Poles with historical records of eagle use will be given 2 points
8. Poles located in high quality raptor habitat (at exact pole location) will be given 1 point. (This variable, due to inherent error in GPS and GIS should be ground truthed in the field to ensure correct habitat classification).

Bald Eagle mitigation site selection characteristics: (developed for GIS based on preferred habitat characteristics as reported in BNA species account (Beuhler 2000) and suggestions from APLIC 2006). NOTE: As with Golden Eagles, we did not have specific information regarding mortality or eagle use of poles within the services areas identified. However, we believe that some of these poles could qualify for mitigation for Bald Eagles, given the proximity to water and anecdotal Bald Eagle sightings. Scores will be out of a potential total of 11 for [redacted] or 9 for [redacted] (see note below.) For this analysis, 7 was the highest score for [redacted] and 5 for [redacted] since we do not have any known eagle nests/eagle sightings.

1. Any pole with historical Bald Eagle mortality that is currently not "avian safe" will be automatically considered high risk.
2. Poles located within identified eagle habitat will be given 2 points **
3. Any pole with greater than 10 habitat types located within 1km will be given 1 point
4. Any pole within 2km of open water will be given 2 points. (Beuhler 2000)
5. Any pole with <25% abundance of human-dominated developed space within 500m (medium and high intensity) will be given 1 point. (Beuhler 2000)
6. Poles within 4km of known active Bald Eagle nests will be given 2 points
7. Poles that have historical eagle observations will be given 2 points
8. Poles located within 500m of gauge stations/weirs/dams/reservoirs will be given 1 point

****Habitat only considered for [redacted] did not have identified habitat, nor was it made clear that there was an effort to create an identified habitat layer. Scores for [redacted] are out of a possible 11, Scores for [redacted] are out of a possible 9.**

Additionally, we reviewed the necessary components to selecting poles for mitigation as put forth in the 2011 Eagle Conservation Plan guidance (while this particular section was not used in the 2013 ECP

1. **Known eagle and raptor mortalities from specific power poles and/or span of line**.

We do not have this data for [redacted] or [redacted] Either there are no mortalities, or the data have not been collected. Due to the nature of the data provided, we relied heavily on GIS data as a proxy, which might be problematic when presenting to the USFWS. According to Angie Jennings of [redacted] data collected for that particular service area has been historically noted as "animal outage." [redacted] has begun collecting specific data regarding mortality of birds in 2013.

2. Located where topographic features suggest power poles and/or span of line is the sole perch, elevated above surrounding terrain, and/or provides a broad field of view.

For poles located within the [redacted] and [redacted] service area, there are no significant topographic features (rises, hills, ridges, etc) that would present ideal perches for raptors. However, these poles are located along the river front in Idaho Falls and near Irwin, ID, which could be potential habitat for Bald Eagles.

3. Power pole and/or span of line is located a) near an eagle territory or migration route, or b) has a high incidence of eagles in the area documented through Breeding Bird Survey (BBS) or Christmas Bird Count (CBC), or other annual standardized surveys

Certain poles within the service area are located within identified eagle habitat (provided by UAMPS to HWI). Poles located in this habitat, as well as near features that might provide prey for Bald Eagle (near seines/gauge stations) or reservoirs will be prioritized for Bald Eagle mitigation.

Ebird data indicates Bald Eagle sightings in Idaho Falls along the corridor selected for mitigation, and a few sightings near Irwin, ID. Ebird is not standardized, so we cannot make inferences based on this data, only that anecdotally, both Bald Eagles, and infrequently, Golden Eagles have been seen (Appendix B and C). CBC data from the Idaho Falls area (circle contains the Snake River) indicates a steady rise in numbers of Bald Eagles seen in Idaho Falls (Figure 2), and that the species has been counted every year between 2000 and 2011 (the last year for which online data are available). There were only a handful of Golden Eagle sightings during CBC counts (Figure 2). Golden Eagles are typically harder to locate during CBC counts due to the fact that most counts occur in areas relatively close to urban populations, and most Golden Eagles are found in relatively rural and undeveloped areas during that time of year.

There were no BBS surveys located within proximate distance of the service areas, but we found routes that contained similar habitat to that in Idaho Falls and the Irwin area. The Ririe Route (33022) has been surveyed every year from 1985 to 2012, and has had 3 Bald Eagle sightings (1992, 2010 and 2011) and 0 Golden Eagle sightings. The Springfield Route (33021) has been surveyed every year from 1983 to 2012, and has had 5 Bald Eagle sightings between 1992 and 1996, and 0 Golden Eagle sightings. The Bates Route (33222) has been surveyed during 1988-1990, 1992-2009 and 2011-2012. There have been 15 Bald Eagle sightings between 1998 and 2009, and 5 Golden Eagle sightings in 1993, 1994 and 2002.

We did not have information regarding nesting sites or sightings from agency partners at the time of writing. We hope to update this section if we do receive that data.

4. Power pole and/or span of line has not received retrofit action since initial construction.
According to [redacted] poles identified within this services area as eligible for mitigation have not received retrofits to be updated to avian-safe structures. Poles within the [redacted] services area are all poles erected prior to avian-safe policies and should be switched out and rebuilt in order to meet minimum avian-safe standards.

5. Can be retrofitted within 1 year of permit issuance.

This is assumed to be true for both [redacted] and [redacted] service areas

6. Power poles occur in same BCR as take is occurring.

The [redacted] power poles occur in the Great Basin BCR, while the [redacted] poles are just over the border in the Northern Rockies BCR (See Appendix D). Due to proximity to the boundary of each BCR, the USFWS may be amenable to including [redacted] poles in a mitigation strategy.

7. Has been identified through APP as a priority replacement.

As stated above, these poles are considered eligible for updates based on conversations with the power service providers. More clarification is needed regarding status of APP development from service providers.

Recommendations and Conclusions:

Retrofitting and Rebuilding:

HawkWatch recommends that the suggested poles in the [redacted] and [redacted] service area would be candidates for mitigation of **Bald Eagles.** In the [redacted] service area, 97 poles scored high enough to be considered for mitigation (Cut off score = 5 out of 9), and all 22 poles in the [redacted] service area are scored high enough to be considered for mitigation ([redacted] had once less criteria, as there was no available identified eagle habitat provided from [redacted] These are candidates for retrofitting based on proximity to water sources, identified Bald Eagle habitat and landscape factors associated with Bald Eagle resource use (See Appendices E and F for maps, Appendices G and H for pole identification information). After analyzing DEM data and land cover types, we concluded that there was limited Golden Eagle habitat near the selected power poles. Additionally, given the lack of information of eagle use of these poles, coupled with the fact that there is little to no Golden Eagle habitat, we recommend finding another mitigation strategy for Golden Eagles.

[redacted] also draws attention to the fact that they have been seeing a substantial amount of road kill near power poles. It may be possible to introduce a program to move or remove roadkill from area just below power poles or along roadways as part of a mitigation plan. Both eagle species regularly feed on road kill, particularly in the winter months, making them susceptible to collisions with vehicles during that time. More information and coordination with the USFWS would be necessary to determine feasibility of this type of mitigation.

6. Poles within 4km of known active Bald Eagle nests will be given 2 points
7. Poles that have historical eagle observations will be given 2 points
8. Poles located within 500m of gauge stations/weirs/dams/reservoirs will be given 1 point

****Habitat only considered for [redacted] did not have identified habitat, nor was it made clear that there was an effort to create an identified habitat layer. Scores for [redacted] are out of a possible 11, Scores for [redacted] are out of a possible 9.**
We believe that it is also important to include information regarding pole structure and configuration as part of any selection criteria for at-risk poles. This data would need to be collected in the field, and would include variables such as pole height, spacing of equipment, types of equipment, type of pole, etc. Rankings could be scored based on risk factors associated with those variables. This data was unavailable for this modeling process, but could be easily added after field visits to poles in the selection sample. We suggest using the poles selected through this as a starting point and further sorting poles based on physical characteristics and equipment on the pole.