

## Oregon Department of Fish and Wildlife

### Incidental Take Permit Application Information For State-Listed, Washington Ground Squirrel (*Spermophilus washingtoni*)

#### 1. Applicant Information:

- a) Affiliation: Leaning Juniper Wind Power II, LLC (subsidiary of PPM Energy)
- b) Project Contact: Sara McMahon or Andy Linehan , Suite 700, 1125 NW Couch St., Portland, OR 97209
- c) Phone: 503-796-7732 (Sara McMahon) or 503-796-6955 (Andy Linehan); Fax: 503-796-6906
- d) E-mail: [sara.mcmahon@ppmenergy.com](mailto:sara.mcmahon@ppmenergy.com) or [andy.linehan@ppmenergy.com](mailto:andy.linehan@ppmenergy.com)
- e) Date: July 18, 2007

#### 2. Project Name and Purpose

Leaning Juniper Wind Power II, LLC (the Applicant) proposes to construct and operate a wind generation facility in Gilliam County, Oregon, with generating capacity of up to approximately 279 megawatts (MW). The Leaning Juniper II Wind Power Facility (the Facility) consists of two main components: (1) Leaning Juniper II South (the south portion of the Facility with up to 186 MW) and (2) Leaning Juniper II North (the north portion of the Facility with up to 93 MW).

All Facility components will be located on private land on which the Applicant has negotiated long-term wind energy leases with the landowners. The turbines for Leaning Juniper II South will be located on land owned by Waste Management Disposal Services of Oregon, Inc., which surrounds the existing Arlington Landfill on three sides. This land functions as a buffer around the landfill and as a source of soils and rock for covering landfill cells as they are filled and closed. Portions of the land are used for cultivation of winter wheat. Other portions are used for cattle grazing. The turbines for Leaning Juniper II North will be located on land owned by a private landowner, J.R. Krebs. This land currently is used for farming and cattle grazing. Easements have also been negotiated with adjacent landowners for road and collector cable access.

The Applicant has submitted an application to the Oregon Energy Facility Siting Council for the Facility. Up to 133 turbines will be located at the Facility site, depending on the final turbine size and vendor as further described in Section B of the Application for Site Certificate. Construction of Leaning Juniper II is currently expected to begin in late 2007 and to be completed in mid-2008. As described in the site certificate application, construction would begin no later than three years after the effective date of the site certificate and would be completed no later than four years after the effective date of the site certificate. The Council

rules allow these deadlines to be extended. Maps of facility layout can be found in the appropriate permitting agency files. The project is anticipated to have a life of 30 years; if and when the project is closed, facilities will be removed to at least three feet below grade and disturbed areas will be revegetated with appropriate native seed mixes in non-agricultural areas. If the life of the facility is greater than 30 years, the Applicant requests that the Incidental Take Permit be extended.

Because the Facility consists of two components that may ultimately be legally and financially discrete and separately owned, operated, and marketed in terms of power sales, the Applicant requests issuance of an Incidental Take Permit that covers the Facility as a whole but also considers the separate impacts of the two Facility components (Leaning Juniper II North and South). For purposes of future corporate strategy and financing, as well as to preserve the ability to potentially separate and market power from the Facility components in the future, the Applicant's parent company, PPM Energy, Inc. (PPM), needs to ensure flexibility. PPM will ensure that the Applicant has access to its parent company's resources and expertise in the development, construction management, and operation of the Facility.

This ITP addresses the activities and potential impacts on Washington ground squirrel (WGS) of the Project. The ODFW acknowledges that the primary landowners have existing, permitted landfill and/or quarry activities on the same parcels, and that nothing in this permit affects the existing rights and obligations of the landowners for these on-going activities.

### **3. Need for Incidental Take Permit including Alternatives Considered**

The Applicant and its consulting biologist (Karen Kronner and staff of Northwest Wildlife Consultants, Inc. of Pendleton, Oregon - NWC) have conducted a range of biological studies over the last 4 years (2003-2007), as described in more detail below in Section 6. Although all permanent facilities have been located outside of known active (WGS) colonies (areas of use), impacts to WGS may occur from a number of activities:

- During the construction phase, WGS may be struck by trucks or other construction equipment as they leave the core colony areas to feed in or travel to adjacent areas.
- During the operations phase, although road traffic will be much lower than during the construction phase, the risk of collision with WGS will continue, although at a lower rate.

Washington Ground Squirrels colonies are known to shift over time, for reasons that may have to do with weather, vegetation patterns, predators, and population cycles. Therefore, it is possible that an increase in the local population of WGS over the life of the project could expose more squirrels to the risks of collision or other disturbance.

#### 4. Species for Which an ITP is Requested

- a) Species affected, including number of adults, young, eggs, acres of habitat, etc.

The species potentially affected by the proposed project is the Washington Ground Squirrel, *Spermophilus washingtoni*.

The Facility is located in the Townships 2 and 3 North and Ranges 20 and 21 East sections. The site is accessed by traveling approximately 3 miles south on Oregon Highway 19 from its intersection with Interstate 84. The area that the Applicant has leased for wind facilities (the area that contains the known, scattered WGS colonies) covers approximately 8,565 acres<sup>1</sup> of land with a range of habitats in varying quality, including large areas of cultivated wheat fields, grassland and shrub-steppe.

NWC staff conducted surveys of the project impact area, using ODFW-approved survey protocols and experienced personnel. Habitat areas suitable for Washington ground squirrels were surveyed by means of spring season walking transects within 1,000 feet of the Leaning Juniper II South components based on the 2005 layout. All habitat suitable for T&E wildlife within the entire Leaning Juniper II North leased area was surveyed by spring season walking transects in 2006. NWC re-visited the Washington ground squirrel colonies identified during these surveys in the spring of 2006 while conducting construction monitoring of the nearby Leaning Juniper wind project owned by Pacificorp.

No WGS colonies were discovered during surveys of Leaning Juniper II North.

As presented in the Incidental Take Permit Application for Leaning Juniper I, active WGS colonies were discovered in several locations within the surveyed corridors near what is now Leaning Juniper II South, as shown in Figures 1 through 4 and described in Table 1. There were five primary patches or occupied colonies and one of these consisted of five smaller areas. The sites ranged from 3 to 74 acres in size and from very low density to dense. There was also a small patch of WGS use west of the E string without natal sites (see area #8 on Figure 2). Some active sites extended onto areas that were outside of the established survey corridor, as squirrels were heard calling from those areas during the surveys.

Most WGS colonies were located in habitat broadly defined during the fall 2004 habitat mapping as shrub-steppe and further typed as having a vegetative cover of rabbitbrush-snakeweed-buckwheat/bunchgrass (SSB). In addition to low, open shrub cover, these sites contain a few species of buckwheat (*Eriogonum spp.*), Sandberg's bluegrass (*Poa sandbergii*) and non-native cheatgrass (*Bromus tectorum*). Most of these areas are sagebrush-steppe attempting to recover from frequent burning, low precipitation cycles and land use. Sagebrush is very

limited and residual, and unburned sagebrush patches mapped as SSA are present in a few colonies. Soil types at the WGS sites are mostly silt-loam with a minor amount of fine, sandy loam. A wildfire burned in the general area on July 6, 2007. However, the fire only burned through one known colony, "Site 2". This is not part of LJ-II.

During the original surveys in 2005, approximately 87 acres of occupied WGS areas were documented within SSB, 20 acres in shrub-grass (SSA) and 4 acres of occupied WGS areas within the annual grassland (GA) habitat type within the Facility lease boundaries. Based on soils and habitat, more WGS colonies may be present within the Facility in uncultivated areas that have not been surveyed. There are approximately 3,650 acres of the SSB habitat type and 485 acres of annual grassland within the Facility lease boundaries. The complete 2005 WGS survey methods and results are provided in the Wildlife Baseline Study (included as Attachment P-2 in the Application for Site Certificate).

The 2006 and 2007 WGS colony monitoring results are included in Table 1 below. There were no observed changes in the colonies in 2006. In 2007, NWC observed that colony #5 near the J turbine string lacked activity and others were noted as expanding slightly (Table 1). While the reason for the lack of activity at the WGS site #5 is unknown, NWC indicated that the lack of activity in 2007 may be due to increased cattle activity in the area or the WGS dispersing to another location. Once the 2007 survey data is fully analyzed and integrated into GIS, a revised map of the WGS locations will be provided to ODFW for their records and integrated into the project constraints maps.

Based on the 2005-2006 WGS survey results, the original project layout was substantially revised (see below, Section 6). The revised project layout avoids all areas that would be classified as ODFW Habitat Category 1 based on the presence of WGS.

As noted above, however, individual WGS may be directly impacted by construction and operations activities going on around the known colonies. The number of individual WGS that could be potentially affected is unknown. Through this application the applicant requests a maximum take of 10 WGS during the construction phase of the project (i.e., for calendar year 2008) and a maximum of 5 per year for the operating life of the project (anticipated to be 30 years) for the Project under this ITP. Therefore, this ITP has a term of 30 years after commencement of commercial operation. The ODFW recognizes that observed WGS mortality could be associated with the Project (and subject to the terms of this ITP and its take limits), with on-going landfill or other landowner operations (outside the scope of this ITP and its take limits), or neither (and thus also outside the scope of this ITP and its take limits). Section 7, below, addresses attribution of WGS mortality to these three causes.

In order to provide for continuity and project planning, the requested ITP may be reopened and revised only if the ITP take allowance has been exceeded or if material factual assumptions leading to ITP issuance are proved to be incorrect, and not otherwise applicable to the current situation.

Table 1. 2005 Washington Ground Squirrel Colonies Identified Near Leaning Juniper II South and General 2006 and 2007 Notes

WGS Colony#*	Soils	Mapped Habitat (late 2004)	Overall Density	Colony Size and Acres (rounded)	General Notes	Proximity to Facilities
1	23B, 56B	SSB, SSA	Dense	Large, 74 ac	Active in 2006 Active in 2007; showed some signs of slight expansion	East of existing access roads and the F turbine string.
4		SSB	Dense	Large, a-e combined=~101 ac	Extensive – probably is larger than surveyed data shows. Probably connects to Colony 1. Active in 2006 however less use was noted at 4d.	
A	23B	SSB	Low Density	Small, 9 ac	Active in 2007- Slight expansion	Leaning Juniper II F turbine string
B	23B	SSB	Medium Density	Medium, 15 ac	Active in 2007-Slight expansion	Leaning Juniper II F turbine string
C	14B, 23B	SSA	Dense	Large, 44 ac	Was probably more extensive to the south in prior years. Probably is more extensive in the area not leased (not surveyed) than shown. Active in 2007. Slight expansion	Leaning Juniper II F turbine string
D	23B	SSB	Dense	Large, 25 ac	Active in 2007 Slight expansion	Leaning Juniper II E turbine string
E	23 B, 23C	SSB	Dense	Small, 8 ac	Connected to D but a noticeable gap in-between Active in 2007. Slight expansion.	Leaning Juniper II E turbine string
5	23C, 23D, 33E	SSB	Dense	Small, 8 ac	Active in 2006. Not active in 2007. No sign of use.	Leaning Juniper II J turbine string and alternate overhead collector line route
6	14D	GA	Very Low	Very Small, 4 ac (May have been just a few individuals)	Sign of activity found at this site, incidental to conducting other 2006 field investigations. Active in 2007. Slight expansion. May now be classified as medium density	South of J turbine string
8	14B, 23B, 32B	SSA	Very Low	Very small, 2 ac	Was likely active in 2005, judging by sign of use noted in December 2005. Heard and saw two or three Washington ground squirrel on February 16, 2006. No indication of natal activity (female with young).	West of E turbine string

\* Table includes only those colonies located near Leaning Juniper II Facility components.

Estimated size based on general observations.

Table 1. 2005 Washington Ground Squirrel Colonies Identified Near Leaning Juniper II South and General 2006 and 2007 Notes

WGS Colony#*	Soils	Mapped Habitat (late 2004)	Overall Density	Colony Size and Acres (rounded)	General Notes	Proximity to Facilities
<p>Small = 10 to 30 individuals.                      Medium = 30 to 40 individuals.                      Large = 40 to 100+ individuals.</p> <p><b>Soils</b></p> <p>14B – Krebs silt loam, 2-5% slopes                      14D – Krebs silt loam, 5-20% slopes                      23B – Olex silt loam, 0-5% slopes                      23C – Olex silt loam, 5-12% slopes                      23D – Olex silt loam, 12-20% slopes                      32B – Ritzville silt loam, 2-7% slopes                      33E – Ritzville silt loam, 20-40% north slopes                      40B – Sagehill fine sandy loam, 2-5% slopes                      56B – Willis silt loam, 2-5% slopes                      (23B has the most WGS use)</p> <p><b>Mapped Habitat</b></p> <p>Specific colony site vegetation descriptions are not yet prepared however, many of the sites burned moderately hot in 1999 or 2000 and are now grassland (native or annual) with open low shrub (rabbitbrush and buckwheat species {Eriogonum}).</p> <p>4c and part of 1 and 4d are unburned sagebrush.</p> <p>The following text is from the NWC November 2004 Habitat Mapping.</p> <p>GA (1 site) - Annual grass and/or weeds. Soil depth variable. Long-billed curlews (LBCU), Washington ground squirrel (WGS). Common species such as horned lark (HOLA).</p> <p>SSA (1 site, part of second site)—Shrub-grass. Sagebrush-rabbitbrush-snakeweed/bunchgrass-annual grasses. Soils medium to deep. Some sites have been intensively impacted by cattle grazing. This type appears to have potential value for shrub obligate species; Loggerhead shrike (LOSH). Also WGS and WTJ. Common species WEME.</p> <p>SSB (many sites)—Open, low shrub and grass. Rabbitbrush-snakeweed-Eriogonum/bunchgrass-annual grass. Native bunchgrass is usually perennial Sandberg's bluegrass (<i>Poa sandbergii</i>). Most of these areas are formerly SS (more sagebrush) attempting to recover from frequent burning. Little current potential for nesting by shrub obligate species. LBCU, white-tailed jackrabbit (WTJ), WGS. Common species HOLA, Western meadowlark (WEME).”</p>						

## **5. Project Description and Methods**

### **a) Leaning Juniper II**

#### **Project beginning and end dates**

Construction of the Project is currently expected to begin in late 2007 and to be completed in mid-2008. As described in the site certificate application, construction would begin no later than three years after the effective date of the site certificate and would be completed no later than four years after the effective date of the site certificate. The Council rules allow these deadlines to be extended.

**Project details, including location, maps, plans, electronic documents, land ownership information at and adjacent to parcel. Equipment to be utilized, names and affiliations of participating personnel including relationship to applicant, and contacts.**

Figures 1 through 4 show the location of the project in relation to the WGS colonies. Construction of the project will require a variety of heavy equipment, including grading and earth-moving equipment; trucks and trailers for delivering gravel, concrete, tower sections, blades, and turbine assemblies; heavy duty cranes for turbine assembly; trenching equipment for installing underground collector cables; and pickup trucks for transporting construction crews and supplies. Other project details, including a description of the applicant and proposed project, a list of equipment to be utilized, maps and plans, and land ownership information at and adjacent to parcel can be found in the Application for Site Certificate provided to ODFW.

Key personnel will be determined closer to construction. In the interim, the contact persons are PPM Energy's project permitting manager: Sara McMahon (503-796-7732) or PPM Energy's Permitting Director Andy Linehan (503-796-6955).

## **6. Proposed measures to minimize impacts or enhance the species**

### **Pre-Project Impact Reduction**

#### **Project Re-routing:**

Following the 2004-2005 habitat and wildlife surveys, the Applicant worked with ODFW to identify turbine locations, laydown areas, and roads

located near known WGS colonies so that these facilities could be relocated during micro-siting to avoid impacting these resources. These changes include:

- Roads such as Juniper Canyon Woodland and two-track farm roads, which cross through WGS colonies, were eliminated from the Facility construction plan.
- Turbines in the E and F turbine strings were relocated from within occupied WGS habitat to outside the occupied habitat.
- The road between E and F turbine strings and construction staging area will be constructed to avoid WGS occupied habitat.
- The road from turbine J-16 to Cedar Springs Road was designed to be located farther from WGS colony #6. During final design, an existing road from ORE 19 to an existing quarry may be used to access J-16 rather than construct a new road.
- In addition, the Applicant will maximize use of existing gravel roads rather than existing two-track, farm roads to avoid impacts to WGS. For example, the Applicant will utilize the graveled road off Highway 19, Stone Lane, as primary Facility access rather than improving the farm road through Juniper Canyon woodland, which traverses historical WGS colony #1.

As a result of these changes, no Leaning Juniper II South component footprint is located within known WGS active colonies or Category 1 habitat. In addition, potential Facility-related disturbance in habitat adjacent to all known WGS patches was kept to a minimum.

### **During Construction**

The Applicant has also committed to implementing protective measures during construction, as summarized below.

- Pre-Construction Baseline Survey. In the spring of 2007, NWC surveyed the full extent of each known colony on the boundary closest to the construction zone to establish a pre-construction baseline survey. Once the 2007 survey data is fully analyzed and integrated into GIS, a revised map of the WGS locations will be provided to ODFW for their records and integrated into the project constraints maps. The revised WGS locations will be marked with exclusion flagging and avoided during construction. If any facility components overlap with the 2007 WGS locations, these will be micro-sited outside of the WGS locations to ensure that no Leaning Juniper II component footprint is located within known WGS active colonies or Category 1 habitat. In addition, potential Facility-related disturbance in habitat adjacent to all

known WGS patches will be minimized to the extent feasible. If construction occurs in 2008 or later, the full extent of each known colony identified in previous years will be surveyed on the boundary closest to the construction zone in the spring prior to construction. Because WGS colonies can change size and shape from year to year, surveying the colony edge prior to construction will ensure that the sensitive area is correctly marked with exclusion flagging and avoided during construction.

- Flagging: the Applicant will identify WGS occupied colonies near planned construction. The biological monitor will mark areas that should not be impacted during construction with brightly colored pin flags or wooden lathes and signing, and instruct the contractor to work outside these boundaries.
- Erosion Control: In an effort to minimize impacts to the project habitat, the Applicant prepared an Erosion and Sediment Control plan in accordance with a NPDES permit and will require the contractor to install erosion and siltation controls near riparian areas and other appropriate locations as designated in this plan.
- Environmental Training: the Applicant will develop an environmental training course for the construction contractors that provides information on the sensitive species present on-site, the exclusion flagging/signing, permit requirements and other environmental issues. All construction site personnel will be required to attend the environmental training in conjunction with hazard and safety training prior to working on-site. All construction personnel will be required to report any vehicular strikes of WGS or any dead or injured WGS found. The Applicant's construction contractor will maintain a list of on-site construction personnel who have received the training.
- Limited Work Areas: Construction work will be limited to the approved and surveyed areas shown on project constraints maps. No working or driving cross-country within the project boundaries as short-cuts or for any other purposes will be permitted without prior approval from appropriate authorities.
- Construction Monitoring:
  - The Applicant uses an on-site manager and requires the construction contractors to designate a Field Contact Representative (FCR) to oversee their compliance during construction. The FCR is responsible for overseeing compliance with environmental protective measures and coordination in accordance with the county and other regulatory agencies.
  - A qualified biologist (NWC WGS specialists or PPM Energy's Sara McMahon) will visit the site periodically before site development and during construction in order to flag sensitive resource areas and oversee construction and permit compliance. Details of proposed construction monitoring are provided in Attachment 1.

## **Post-Construction**

After construction is complete, the Applicant will work to restore the habitat to pre-construction standards and monitor WGS impacts that may occur unintentionally during project operations. Habitat mitigation measures are summarized below as well as reporting of incidentally-found WGS carcasses or injured WGS and appropriate care:

Habitat Restoration: the Applicant will implement the Revegetation Plan included as Attachment B to the Site Certificate. In order to re-establish plant communities of most value to wildlife, native species will be used in non-agricultural areas to the maximum extent possible.

Habitat Conservation: The Applicant will implement the Habitat Mitigation Plan included as Attachment C to the Site Certificate for preservation and enhancement of an area of land near the Leaning Juniper II Wind Power Facility to mitigate for the impacts of the facility on wildlife habitat. The property will be protected under a conservation easement for the life of the Project.

Monitoring. The Applicant will conduct long-term post-construction surveys to collect data on WGS activity within the wind project lease boundary. A qualified professional biologist will monitor the WGS sites identified during the pre-construction surveys (2005 through 2007) and the buffer area within 500 feet in all directions from the identified WGS sites in suitable habitat. The certificate holder shall conduct surveys during the year following construction and every three years thereafter for the life of the Project.

Surveyors will walk standard protocol-level transects twice between late March and late May and record level of use, notes on natal sites and physical extent of the sites. Details of proposed post-construction monitoring are provided in Attachment 2.

Reporting. The Project staff (whether the Applicant employees, turbine contractor or other) will be required to report any WGS carcasses, injured WGS or vehicle strikes of WGS during operations of the Project for the life of the project. A reporting plan will be prepared, agreeable to the ODFW. Injured animals will receive immediate care as described in the Applicant's Wildlife Incidental Response and Handling System (to be prepared before start of Operations).

## **7. Project Outcome Reporting**

In the event that one or more WGS are taken during and as the result of the construction or operation of the Project, the ITP holder will report this taking to

the ODFW within 3 working days. As discussed earlier, the ODFW recognizes that observed WGS mortality could be associated with the Project (and subject to the terms of this ITP and its take limits), with on-going operations (outside the scope of this ITP and its take limits), or neither (and thus also outside the scope of this ITP and its take limits). The ITP holder will provide any evidence of the cause of the WGS mortality (or injured WGS). The cause of the fatality will be attributed to the project if there is evidence demonstrating that the observed mortality is associated with the project. All specimens will be collected and retained if possible and made available to the ODFW. The ITP holder will report any survey results and a cumulative total of any WGS taken as a result of this to the ODFW on an annual basis.

*Andrew O. Linehan*

July 18, 2007

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Signature of Applicant

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Date

Andrew Linehan  
Name

Wind Energy Permitting Director  
Title

## Attachment 1

### Construction Monitoring

#### Leaning Juniper II

Prior to construction, the Applicant will survey the full extent of each known colony identified in 2005, 2006 and/or 2007 on the boundary closest to the construction zone. Because WGS colonies can change size and shape from year to year, surveying the colony edge prior to construction will ensure that the sensitive area is correctly marked with exclusion flagging and avoided during construction.

The following construction monitoring specifies different monitoring protocols for different levels of Leaning Juniper II construction activity.

#### ***Level 1 Construction Activity***

Facilities are relatively close to WGS sites and construction activity is likely to be more extensive and occur over a relatively long period. Monitoring will be intensive when needed with intermittent inspections before and after construction in the immediate area. Three sites – WGS sites 4, 5 and 6

**Facility and Location: New road and E and F turbine strings near WGS patch 4, particularly 4a, 4b and 4 c; alternate overhead collector line over WGS patch 5 and road around WGS patch 6, near J turbine string.**

Prior to any ground disturbing activities, the Applicant's representative (NWC) will mark the colony boundary closest to the new road and anticipated construction zone.

Experienced field biologists will walk through the known WGS site and look for sign of use by WGS. WGS may emerge as early as late January and could occupy areas not documented during the pre-construction protocol surveys. As discussed earlier, in the spring of 2007, NWC surveyed the full extent of each known colony on the boundary closest to the construction zone to establish a pre-construction baseline survey. Once the 2007 survey data is fully analyzed and integrated into GIS, a revised map of the WGS locations will be provided to ODFW for their records and integrated into the project constraints maps. The revised WGS locations will be marked with exclusion flagging and avoided during construction. If construction occurs in 2008 or later, the full extent of each known colony identified in previous years will be

surveyed on the boundary closest to the construction zone in the spring prior to construction. Because WGS colonies can change size and shape from year to year, surveying the colony edge prior to construction will ensure that the sensitive area is correctly marked with exclusion flagging and avoided during construction.

If construction will not occur until after March 1 when WGS activity has accelerated, biologists will observe WGS and construction activities from a safe and unobtrusive distance. If needed, the video probe can also be used to supplement the above-ground visual observations.

If any facility components overlap with the WGS locations, these will be micro-sited outside of the WGS locations to ensure that no Leaning Juniper II component footprint is located within known WGS active colonies or Category 1 habitat. In addition, potential Facility-related disturbance in habitat adjacent to all known WGS patches will be minimized to the extent feasible, as further described below.

#### WGS Site 4

To avoid and minimize impacts to the WGS site # 4 (a, b, and c), the collector line routes and roads along the F turbine string will be micro-sited outside of the WGS sites to ensure that no permanent facility components or temporary construction areas will be located within known WGS active colonies or Category 1 habitat. The collector lines, roads and construction paths and staging areas will be routed around the WGS colonies. For example, the collector line from F-11 will not continue to F-10, nor will the line from F-8 go to F-7. Instead, the lines will collect electricity from the turbines and transport the energy back to the substation along routes that follow project access roads, which will also be micro-sited outside WGS sites.

#### WGS Site 5

WGS Site #5, which was active in 2005 and 2006 and inactive in 2007, may become active again. To avoid and minimize impacts to the WGS site # 5, the alternate collector line route from turbine J-17 to J-14 would not be constructed unless the preferred route from J-17 to J-14 is determined to be infeasible. The preferred route runs generally to the south of WGS site #5. If the alternate route were to be used, the WGS site #5 would be crossed by an overhead collector line. The applicant would avoid placing any temporary construction paths or permanent overhead transmission line poles inside the colony. If practicable, the overhead line will be micro-sited so that the wires are not placed over the WGS site. As required by the Site Certificate, all project overhead collector lines would be constructed in accordance with the recommendations of the Avian Power Line Interaction Committee for raptor protection on power lines (including minimum conductor spacing and the use of anti-perch guards near turbines).

## WGS Site 6

The road from Highway 19 to turbine J-16 would be routed to avoid any temporary or permanent impacts to the WGS Site #6.

2. An environmental monitor will be present during new road construction and during initial construction and blasting at these turbines. It is assumed that initial road blading/clearing and graveling will take 1-2 separate days, not necessarily all at one time and that turbine site preparation (blasting or other) will entail several periods of high activity and periods of a couple of hours or more intermittently over a range of three months. A monitor will be present during the entire duration of road blading/clearing and blasting near this group of turbines. Observations of squirrel responses and construction equipment near active squirrel burrow will occur from a specific vantage point.

3. After initial road clearing, after blasting, and periodically during the entire construction period in this vicinity the monitor will search for sign of direct impact to WGS, as required in the ITP. It is anticipated that weekly searches for WGS carcasses will occur, safety permitting, along the new access and turbine string roads closest to the colony. The biological monitor will schedule inspections in coordination with the contractor foreman to be able to inspect immediately after construction activities have subsided to a safe level.

### ***Level 2 Construction Activity***

Facilities are located further from WGS sites. Monitoring will be brief and intensive with intermittent inspections before and after construction in the immediate area. Two sites: WGS patch 1 and 4 (4d, 4e).

#### **Facility and Location: WGS patch 4 (4d and 4e) and 8 near E and F turbine strings.**

Prior to any ground disturbing activities, the Applicant's representative (NWC) will mark the WGS boundary closest to the turbine string, using the pre-construction data and historic activity in 2005, 2006 and early 2007. The colony boundaries will not be adjusted earlier than April 1 (after WGS activity levels are more predictable).

1. The environmental monitor will periodically inspect the site prior to and during authorized construction to monitor for unauthorized use by construction contractors or others.
2. If any of the known WGS sites are active during construction, the monitor will be present during the turbine string road construction blading/clearing and observe WGS activity from a safe and unobtrusive vantage point.

3. After initial road clearing and turbine pad preparation, the monitor will search for sign of direct impact to WGS, as required in the ITP.

### ***Level 3 Construction Activity***

Facilities are located further from WGS sites and are not within planned, construction authorized access areas. Three WGS sites – 1, 2 and 7.

Prior to start of construction, “No Entry” Signs will be placed at strategic locations such as existing roads or two-track trails that would take the person to a known WGS colony.

## **Attachment 2 Post-Construction Monitoring**

### **Objective**

The primary objective of the post-construction monitoring is to determine the current status of the pre-construction baseline sites. This can be accomplished by assessing notable changes in the overall use level (density and extent) of colonies.

### **Assumptions:**

1. Permit holder will use pre-construction baseline data.
2. Permit holder will assess each of the six sites identified in 2005 and any expanded 2005 sites or new sites identified in 2006 or 2007 during the first year of post-construction monitoring and every three years for the life of the project.
3. If new occupied sites are incidentally discovered while conducting the periodic post-construction monitoring, the location and a site description will be prepared. The new sites will not be monitored, unless they are immediately adjacent to the pre-construction baseline sites.

### **Methods**

#### **On-Site**

WGS sites within the project lease boundary that were identified prior to construction would be surveyed, with a buffer of an additional 500 feet in all directions during the first year of operations (only within suitable habitat within the project [wind lease] area) and every three years for the life of the Project. Surveyors will walk 30 to 50 meter wide transects twice from late March through late May and record the following: 1) level of use (low medium or high density), notes on natal sites present, and 2) the extent of colony (with natal sites) or small patch (no sign of natal site, likely adult males). GIS-based maps will be prepared and maintained in the Applicant's and NWC project files.