

## Shepherds Flat Wind Farm

### Application Comments and Department Responses

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In November 2007, the Department declared the site certificate application for the Shepherds Flat Wind Farm to be complete. The Department issued public notice and notice to the reviewing agencies and requested comment on the completed application by the deadline of January 10, 2008. The Department received comments from the persons and agencies listed below (comments were received on the dates indicated). In the table that follows, the Department has summarized the issues raised in the comments and has provided a response.

#### Reviewing Agencies

Linda Hayes-Gorman, Oregon Department of Environmental Quality (11/30/07)  
 Heidi Williams, Oregon Department of Environmental Quality (12/4/07)  
 Jerry Sauter, Water Resources Department (12/12/07)  
 Morrow County Court (1/9/08)  
 Rose Owens, Oregon Department of Fish and Wildlife (1/10/08)

#### Public Comments

Andrew Vetterlein (12/4-10/07)  
 Jaqueline Wilson (12/5-8/07)  
 David Bullock (12/21/07)  
 John Chess, Oregon Historic Trails Advisory Council (1/09/08)  
 Christina Welch, Bureau of Land Management (1/10/08)  
 Dave Iadarola, Invenergy Wind North America LLC (1/10/08)  
 Glenn Harrison, Oregon-California Trails Association (1/10/08)  
 Stafford Hazelett (1/10/08)  
 Leslie Nelson, The Nature Conservancy (1/10/08)  
 Nancy Gilbert, US Fish and Wildlife Service (1/10/08)  
 Jill and Charles Barker (1/14/08)

Comment	Response
<b><u>Reviewing Agency Comments</u></b>	
<b>Linda Hayes-Gorman, Oregon Department of Environmental Quality</b>	
“We encourage the control of any dust that is generated by construction activities through best management practices, such as applying water to roads and disturbed soil areas during construction.”	A recommended site certificate condition requires the certificate holder use best management practices to control dust generated by construction activities.
<b>Heidi Williams, Oregon Department of Environmental Quality</b>	
“In regards to the storm water permits, the 1200-C NPDES general permit may be required if the facility disturbs more than one acre. This permit covers storm water run-off during construction activities.”	A recommended site certificate condition requires the certificate holder to have the 1200-C NPDES general permit prior to construction.
“The facility will require construction installation permits for its on-site wastewater treatment systems.”	A recommended site certificate condition requires the certificate holder to obtain all state and local construction-related permits, including permits for the proposed on-site septic systems.
“The facility does not anticipate washing the blades, as described in Exhibit O. If it decides to wash the blades, ODEQ has determined wind farms are exempt from holding an industrial wash water permit.”	The applicant does not anticipate the need for blade washing at any time during operation of the proposed facility.
“If the contractor would like to set up a temporary concrete batch plant in Oregon, they may need a permit (1200-A and/or a WPCF 1000 general permit).”	The proposed site certificate does not authorize construction of an on-site concrete batch plant.

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Comment	Response
<b>Jerry Sauter, Water Resources Department</b>	
<p>“the source of water for construction needs is intended to be supplied from the City of Arlington. As long as the City has water available within the limits of their water rights, this Department has no issue. Water needs for the facility after construction, are designed to fall with exempt limits from a well.”</p>	<p>The application includes a letter from attorneys for the City of Arlington confirming that sufficient water would be available to meet construction needs. Water use during operation would be within the exemption limit for industrial use.</p>
<b>Morrow County Court (Special Advisory Group)</b>	
<p>“The Shepherds Flat Wind Farm does have a different foot print than the previously locally approved Shepherds Ridge Wind Farm. The total number of turbines are comparable, but larger turbines are proposed which will increase the MW output to almost double the previous approval in Morrow County. These changes should not significantly alter the Conditions of Approval from the earlier Morrow County Conditional Use Permit or our request that those Conditions be applied to the Site Certificate.”</p>	<p>The Department has reviewed the conditions of approval imposed by Morrow County on the Shepherds Ridge Wind Farm (CUP-N-192) and has incorporated the substance of those conditions in the recommended site certificate conditions.</p>
<p>[The comment letter listed various local approvals that would be needed for the proposed SFWF.]</p>	<p>A recommended site certificate condition requires the certificate holder to obtain all state and local construction-related permits and approvals.</p>
<p>“Provide a Decommission Bond at \$4,000.00 per turbine for the cost (net of scrap value) of removing the facility at the end of its useful life.”</p>	<p>The Council’s Retirement and Financial Assurance Standard addresses site restoration at the end of the facility’s useful life. A recommended site certificate condition requires financial assurance be given to the Council to ensure the availability of adequate funds to restore the site if the certificate holder fails to do so. The Department discussed the need for a separate County “Decommissioning Bond” with the Morrow County Planning Director. In a follow-up letter (February 13, 2008), the Director withdrew the County’s request for a separate bond.</p>
<p>“Recently Morrow County did enter into an Intergovernmental Agreement and is now participating with the Community Renewable Energy Association (CREA). The mission of the organization is to foster Community Energy Projects and assure their compatibility with the built environment and adjoining neighbors and projects. The abandoned railroad communities along Highway 74, Cecil and Morgan, would be examples of communities this organization would have an interest in and would want to assure no negative harm befell them.”</p>	<p>The proposed facility would have no adverse impact on the “built environment” within the abandoned communities of Cecil and Morgan.</p>
<p>“Based on this philosophy Morrow County would encourage the Energy Facility Siting Council to consider appropriate setbacks to neighboring land owners and future wind projects. Morrow County has approved the Willow Wind project proposed by Invenergy also along Highway 74. A map of the projects location in attached for your information. We would hope to see adequate setbacks for the Shepherds Flat project so as to not interfere with the Willow Wind Project.”</p>	<p>Based on a review of the map provided by Morrow County, the Department determined that the proposed SFWF site boundary is at least a mile from the western boundary of the Willow Wind project area. This separation between boundary lines is sufficient to ensure adequate separation between turbine locations. The projects share a small section of boundary along the southern edge of the Willow wind project area, but considering that the prevailing wind is generally from the west-southwest, the SFWF would not likely cause significant interference. The Department discussed the setback issue with the Morrow County Planning Director. In a follow-up letter (February 13, 2008), the Director noted that the County has not adopted any setback regulating wind energy development. The Director agreed that adequate separation exists between the</p>

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<p>“Issuance of the Zoning and Building Permits will be based upon receipt of an avian study that indicates a low avian impact. <i>(An avian study was received for the original footprint, however an updated avian study should be submitted.)</i>”</p>	<p>boundaries of the Willow Wind Project and the SFWF.</p> <p>The application includes analysis of on-site wildlife surveys that have been conducted within the analysis area. In consultations with the Morrow County Planning Director, the Department has described the additional avian and other wildlife studies that the applicant has completed since the time of the County’s review of the Shepherds Ridge project. In a follow-up letter (February 13, 2008), the Director agreed that no further avian study is needed.</p> <p>The Department’s draft proposed order includes recommended findings regarding the review criteria for issuing a Zoning Permit.</p>
<p>[The comment letter states that Access Permits would be necessary for Fairview Lane and Cecil Road and that repair and maintenance bonds be provided in the amounts of \$125,000 for Fairview Lane and \$100,000 for Cecil Road.]</p>	<p>A recommended site certificate condition requires the certificate holder to restore county roads to pre-construction condition or better, to the satisfaction of the applicable County departments. The recommended condition requires the certificate holder to post bonds to ensure funds are available to repair and maintain roads affected by the proposed facility, if bonds are required by the County.</p>
<p>“The applicant, working with the Lone Rural Fire Protection District and the Morrow County Sheriff’s Office, shall formulate an emergency access plan and provide access to emergency personnel in case of an emergency. The Supplemental Information to the Application indicated that fire protection is provided by the “Morrow County Rural Fire District”, which does not exist. Fire protection in that part of Morrow County is provided by the Lone Rural Fire Protection District. The requirement still stands that Shepherds Flat Wind Farm provide an emergency access plan for emergency response in concurrence with the Lone Rural Fire Protection District.”</p>	<p>The applicant has contacted the Lone Rural Fire Protection District. The Fire Chief expressed no concerns about the proposed SFWF.</p> <p>A recommended site certificate condition requires the certificate holder to develop and implement fire safety plans in consultation with the local fire protection agencies. Another recommended condition requires the certificate holder to provide a site plan to the fire protection agencies, to identify each turbine by number and to provide a contact list of facility personnel available to respond on a 24-hour basis in case of an emergency on the facility site.</p>
<p>“Signs shall be located at project entry points and will meet the requirements of the Morrow County Zoning Ordinance Section 4.070. Additionally, any signs located along Oregon State Highway 74 will need to meet Oregon Department of Transportation requirements and any Oregon State Scenic Byway requirements.”</p>	<p>A recommended site certificate condition allows the certificate holder to erect two signs to identify the facility (one near each field workshop), requires the certificate holder to design the signs in accordance with the applicable County ordinances and prohibits facility signs along Highway 74.</p>
<p>“After construction reclaim the site, excepting the project roads and tower foundations, to pre-construction condition.”</p>	<p>A recommended site certificate condition requires the certificate holder to restore areas disturbed during construction in accordance with the Revegetation Plan incorporated in the Final Order on the Application.</p>

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<p>“The supplement states in the Visual Analysis for Morrow County that “The facility will be visible from most of the northern half of Morrow County, and the visual impact is expected to be significant.” Some analysis as to what is considered to be significant is needed. Additionally, although the Morrow County Comprehensive Plan does not designate any sites or areas as high in scenic-resource value, there is a post-Comprehensive Plan adoption scenic resource that has been left out of the Application. That resource is the Blue Mountain National Scenic Byway, which could be impacted by the Shepherds Flat Wind Farm.”</p> <p>“Analysis is needed as to how/whether the wind towers will impact the viewshed along the Byway in the Wind Farm location.”</p>	<p>The applicant’s “Zone of Visual Influence” map (App Supp, response to RAI R2) indicates that from many vantage points within northern Morrow County (including locations along Highway 74) there would be a line-of-sight to a large number of proposed SFWF wind turbines. Other development is already visible along parts of the Blue Mountain Scenic Byway. Turbines within the County-approved Willow Creek Wind project would be visible from locations along Highway 74.</p> <p>In approving the Shepherds Ridge CUP, the Morrow County Planning Commission noted that Highway 74 is part of the Blue Mountain Scenic Byway and that wind turbine towers would be visible from the highway. To lessen the visual impact, the Commission required the turbine towers to be “light grey or off-white in color” and prohibited logos or signs on the units. Consistent with the County’s decision for Shepherds Ridge, a recommended site certificate condition requires the certificate holder to paint the turbine towers in a non-reflective neutral white color. The condition allows unobtrusive manufacturers’ logos on turbine nacelles.</p>
<p>“The letter dated March 23, 2007, to the Oregon Department of Energy regarding the Shepherds Flat Wind Farm application identified five policies of the Comprehensive Plan that are applicable criteria for a wind farm project in Morrow County.”</p> <p>“...if the Conditions of Approval are met and other considerations as mentioned in Paragraphs D and E above are addressed, the project will meet the above stated policies.”</p>	<p>In recommending land use findings to the Council, the Department has addressed the five policies identified in the comment letter. The “Conditions of Approval” and “other considerations as mentioned in Paragraphs D and E” are addressed in the comments discussed above.</p>
<p><b>Rose Owens, Oregon Department of Fish and Wildlife</b></p>	
<p>“ODFW recommends that the applicant be required to designate micro-siting areas or corridors within which the project facilities would be located and within which higher quality habitat and threatened, endangered and sensitive species habitats are avoided and minimized to the extent possible.”</p>	<p>The applicant has requested that the entire area within the site boundary be considered a micro-siting area for the project. The applicant has reduced the area within the site boundary as described in the application by more than 9,700 acres, compared to the site boundary area described in the Notice of Intent.</p> <p>A recommended site certificate condition requires the certificate holder to avoid disturbance of high-quality habitat (including all Category 1 and 2 habitat) within the site boundary.</p> <p>The Council’s rules allow an applicant to apply for the micro-siting area that the applicant considers necessary to allow sufficient flexibility to build the project subject to all of the constraints specified in a site certificate.</p>
<p>“Considering that the Shepherds Flat Wind Farm “site boundary” area is so large (27,520 acres), ODFW is not certain that the habitat categorization mapping and quantification in the application adequately represents small “pockets” or “microsites” of higher quality habitat within large mapped areas of category 3 and 4 habitat.”</p>	<p>A recommended site certificate condition requires the certificate holder to avoid disturbance of high-quality habitat (including all Category 1 and 2 habitat) within the site boundary.</p> <p>Another recommended site certificate condition requires the certificate holder to provide maps of the final design footprint of the SFWF to the Department and ODFW and to obtain Department approval before beginning construction. The recommended condition requires the certificate holder to complete a habitat assessment of the final design footprint before construction, subject to consultation with ODFW and approval by the</p>

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Comment	Response
	<p>Department.</p> <p>There are about 21,919 acres within the site boundary described in the application.</p>
<p>“ODFW staff visited the project site in October of 2007 and pointed out several category 2 habitat “pockets” within one large mapped category 3 habitat area. These category 2 habitat “pockets” are/were not shown on the application mapping.”</p>	<p>At the time of the site visit, the applicant agreed that the “pockets” of Category 2 habitat were overlooked in the mapping.</p> <p>A recommended site certificate condition requires the certificate holder to complete a habitat assessment of the final design footprint before construction, subject to consultation with ODFW and approval by the Department. Another recommended site certificate condition requires the certificate holder to avoid disturbance of all Category 1 and 2 habitat within the site boundary.</p>
<p>“surveys completed in 2007 for grasshopper sparrows (State sensitive vulnerable species) were not conducted as ODFW recommended”</p>	<p>A survey for grasshopper sparrows was done at the request of ODFW, and a report of the survey is included in the Application Supplement (Attachment P-5b). The survey addressed the areas of concern to ODFW, including transect surveys within the northern project area along a fence line and within CRP land seeded in bunchgrass in the southern project area. In addition, the survey included 10 sample spot surveys (nine that were spaced to cover the northern area and one in the southern area).</p> <p>In a meeting with the Department, ODFW staff stated that additional grasshopper sparrow surveys would not be likely to affect the habitat Category classification, and therefore ODFW did not request additional surveys.</p>
<p>“ODFW does not consider weedy, previously cultivated or presently cultivated land to be category 6 habitat but instead category 5”</p>	<p>The applicant classified all presently cultivated land within the SFWF site boundary as Category 5. In a revised habitat assessment, the applicant has classified all previously cultivated land as Category 4 or 5, depending on the condition of the vegetation.</p>
<p>“ODFW continues to have serious concerns about the applicant’s initially proposed mitigation site”</p>	<p>Based on ODFW’s rejection of the mitigation area that the applicant had initially proposed, the applicant identified a new mitigation area. ODFW has approved the new mitigation area.</p>
<p>“ODFW anticipates having the opportunity to work further with ODOE and the applicant on future versions of the project’s Habitat Mitigation Plan, Wildlife Monitoring and Mitigation Plan and Revegetation Plan, prior to their finalization.”</p>	<p>The Department prepared final discussion drafts of the Habitat Mitigation Plan, Wildlife Monitoring and Mitigation Plan and Revegetation Plan. ODFW was given the opportunity to review and comment on those drafts before the Department issued the Draft Proposed Order.</p>
<p><b>Public Comments</b></p>	
<p><b>Andrew Vetterlein</b></p>	
<p>“Why do the wind turbines have to be WHITE? It certainly doesn’t help them blend into the surrounding scenery.”</p>	<p>The FAA guidelines for aviation safety advise that wind turbines should be painted white for visibility during daylight hours. This eliminates the need for white strobe lights during the day. The white color also may help avian species see the turbines and avoid them.</p>

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Comment	Response
<p><b>Jaqueline Wilson</b></p>	
<p>“Although I want clean air and water and am not against wind turbines, I would like to know what siting studies have been done prior to siting regarding bird depredation and what studies and for how long will they be done after construction.”</p>	<p>The Oregon Energy Facility Siting Council has two siting standards that specifically address impacts on wildlife. These standards are the Threatened and Endangered Species Standard and the Fish and Wildlife Habitat Standard. Applicants must demonstrate that a proposed facility would not be likely to cause a significant reduction in the likelihood of survival or recovery of a threatened or endangered species. Applicants must also demonstrate that the proposed facility would be consistent with the fish and wildlife habitat mitigation goals and standards established by the Oregon Department of Fish and Wildlife. The application includes information regarding baseline avian studies. The Department’s recommended Wildlife Monitoring and Mitigation Plan addresses post-construction avian monitoring.</p> <p>Not all of the wind development projects in Morrow and Gilliam County are under the jurisdiction of the Council. No wind turbines currently operating in either county have been required to meet the Siting Council standards. Wind projects that have less than 105 megawatts of peak generating capacity are not within the jurisdiction of the Council. Those projects are permitted by the County, and comments regarding avian studies for those projects should be addressed to the County Planning Commissions.</p>
<p>“I have difficulty with the words "expidite" and "mitigation" found in so much of the material. I am wondering how someone can mitigate a flyway for migrating birds. And why are only threatened or endangered birds important. Not being careful of all birds is how they become threatened.”</p> <p>“Although I may have missed something in all that information, I did not see anything about how long studies are done after wind turbines are completed. I also wonder why not all wind turbines come under the siting rules of the Oregon Dept. of Energy. After all, they effect the whole state.”</p>	<p>The Council is concerned with all wildlife, not just threatened and endangered species. The Council addresses mitigation largely through the Habitat Standard, which is not limited to threatened and endangered species.</p> <p>Mitigation for the habitat effects of a wind project has typically involved requiring the site certificate holder to acquire a legal conservation easement on an area of land and to protect that area from any development for the life of the wind project. The size of the mitigation area depends on the size of the wind project and the type of habitat that is occupied by the wind project. The proposed Habitat Mitigation Plan requires habitat enhancement measures to improve the mitigation area for the benefit of wildlife species. The HMP requires monitoring of the mitigation area for the life of the project to ensure that the enhancement is carried out.</p> <p>The question about how long studies are done after a wind project is completed is not simple to answer. The Wildlife Monitoring and Mitigation Plans for Leaning Juniper II, Klondike III and Biglow Canyon contain multiple post-construction monitoring components. Formal scientific data-gathering on avian and bat fatalities is one component. Fatality monitoring is typically required for two years, but this monitoring can be extended over a longer period if a wind project is built in phases. In addition, the monitoring may be extended (or other mitigation measures required) based on the results of the monitoring, if the analysis shows that fatality rates are higher than expected or at a level of concern. Although this might sound imprecise, it is important for the Council to retain flexibility to appropriately address new information in the future.</p>

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	<p>The Council has a procedure for “expedited review,” but this has no bearing on the level of scrutiny that the Department gives to an application. It refers to whether a Notice of Intent is necessary at the very beginning of the process. It does not change the application requirements or the standards that a proposed facility must meet. The SFWF was not eligible for expedited review. The developer submitted a Notice of Intent in June 2006.</p> <p>Regarding mitigation for a “flyway for migrating birds,” there does not appear to be a clear definition of “flyway” or precise locations of known “flyways.” To the extent the location of flyways is known, the best mitigation is for developers to avoid locating wind turbines within the known flyway locations. The applicant, in this case, is not proposing to locate any wind turbines within any known flyway.</p> <p>Regarding jurisdiction, the Council has only the power given to it by the Oregon Legislature. The Oregon siting statutes dictate the jurisdictional threshold. Any change to the current limitations on Council authority would require a change of the statute by the Oregon Legislature.</p>
<p><b>David Bullock</b></p>	
<p>“My concern is that if the wildlife impact is viewed only on an individual project basis the real and actual impact on the wildlife of the region will not be adequately addressed, given the cumulative nature of these projects. I strongly advise that a Cumulative Impact Study be done - prior to the issuance of any further site permits - that will address this issue.”</p>	<p>The Council has voiced its concern about cumulative impacts at several Council meetings in 2007. The Department has been meeting with the US Fish and Wildlife Service and the Oregon Department of Fish and Wildlife to address the cumulative impact question in a more general way.</p> <p>Cumulative impacts are addressed under the Council’s Siting Standards for Wind Energy Facilities. The application for the SFWF includes a cumulative impacts study (App Supp, Attachment P-6).</p>
<p><b>John Chess, Oregon Historic Trails Advisory Council</b></p>	
<p>“On February 26, 2007 OHTAC provided a response to the Shepherd Flat Wind Farm. In this response OHTAC requested information upon which to base any additional mitigation requirements and requested that photographic evidence be taken and filed with SHPO to provide visual documentation of the view shed prior to any construction. We also relayed our agreement with the rustic fencing to be built around part of the identified area of Trail ruts and an informational posting for the Trail.”</p>	<p>AINW conducted an on-site survey of the multiple mapped alignments of the Oregon Trail within the site boundary and submitted a report in October 2007. The report is included in the application (App Supp, Attachment S2). The report includes five photographs.</p> <p>A recommended site certificate condition requires the certificate holder, before beginning construction, to provide to SHPO photographic documentation of the presumed Oregon Trail alignments within the site boundary.</p> <p>The proposed fencing of trail ruts (App, Exhibit S, p. 4) pertained to an area near the Cecil store. This area lies approximately a half mile east of Highway 74. The applicant has withdrawn the proposal to fence this area because it is not within the site boundary (App Supp, response to RAI S3).</p>
<p>“Upon review of the site application dated November 19, 2007, RAI# 3, S4 page one, I have noted the placement of the transmission line in the Four Mile Canyon and wish to express that should the transmission line fall within the vicinity of remnants of the Oregon Trail, that measures be taken to ensure that visible Trail ruts not be</p>	<p>The applicant revised the route of the transmission line in response to comments. The proposed route of the transmission line would avoid the visible remnants of the Oregon Trail in Fourmile Canyon. A recommended site certificate condition prohibits placement of any SFWF components on visible remnants of the trail.</p>

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Comment	Response
physically impacted and that visual impacts be minimized and mitigated.	
<b>Christina Welch, Bureau of Land Management</b>	
<p>“The Horn Butte Area is designated by the BLM as an area of critical environmental concern to protect long-billed curlew, a BLM sensitive species that breeds there.”</p> <p>“Soil disturbance from the proposed project could allow noxious weed spread on both private and public land, potentially degrading soil and thus wildlife habitat. We recommend the applicant limit soil disturbance; seed all disturbed areas; and survey and treat weeds in all disturbed areas for three years after seeding.”</p>	<p>A recommended site certificate condition requires the applicant to limit soil disturbance as much as practicable (for example, by crushing rather than scraping temporary disturbance areas). Another recommended condition requires the certificate holder to restore disturbed areas in accordance with the Revegetation Plan, which provides for weed control on an annual basis until the disturbed areas are successfully revegetated. Another recommended condition requires the certificate holder to implement a plan to control the introduction and spread of noxious weeds during construction and operation of the facility, consistent with the Gilliam County and Morrow County Weed Control Programs.</p>
<p>“We have been battling for years yellow starthistle and spikeweed west of Highway 74, just west of our Horn Butte area. The threatened lichen <i>Texosporium sancti-jacobi</i> occurs in the Horn Butte area. We recommend the applicant limit soil disturbance; seed all disturbed areas; and survey and treat weeds in all disturbed areas for three years after seeding.”</p>	<p>(see above)</p>
<p>“Ground disturbing activities would potentially allow sediment to enter the stream channel.”</p> <p>“Both Eightmile and Willow Creek within or near the project area and are listed as water quality limited by the State (303d). Eightmile is listed for dissolved oxygen, which is usually and indicator that several factors are out of balance with the landscape. Generally the water is warm and slow flowing. As a potential mitigation measure, the applicant could rehabilitate riparian vegetation in that channel, improving the currently minimal buffer of vegetation that catches sediment before it reaches the stream and floodplain. Another option would be to acquire instream flow leases for the hot summer season to reduce bacterial activity by flushing away the benthic sludge which is using oxygen.”</p>	<p>A recommended site certificate condition requires the certificate holder to conduct all construction work in compliance with an Erosion and Sediment Control Plan (ESCP) satisfactory to the Oregon Department of Environmental Quality and as required under the National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge General Permit #1200-C.</p> <p>The primary use of water during construction is for road watering (to reduce dust emissions) and for concrete mixing (which would occur off-site). There would be preliminary rinse-out of concrete trucks on-site, but the rinse water would be disposed of in excavation holes and would not be allowed to run off the site. For these reasons, it is unlikely that any sediment would be allowed to enter the Eightmile Creek (or Willow Creek). In addition, Eightmile Creek would likely be dry during much of the construction period.</p>
<p>“The construction of wind turbines and a road system on private land north and south of County Road 422 (Fourmile Canyon Road) would have no direct impact on cultural sites on public lands. However, there may be indirect impacts to one known cultural site located in the project area. That site is the nationally significant Fourmile Canyon segment of the Oregon Trail managed and interpreted by the BLM Prineville District.” [In a footnote, the BLM notes that the Fourmile Canyon segment of the ONHT has been nominated for inclusion in the NRHP.]</p> <p>“To mitigate the potential indirect effects, we recommended that no turbines be visible from the interpretive kiosk. It appears this may affect the placement of at least two turbines.”</p>	<p>The applicant met with the BLM to discuss the concern about “indirect impacts” to the Oregon Trail remnants near the BLM interpretive wayside on Fourmile Canyon Road. The BLM recommendation that “no turbines be visible” from the wayside would affect a significant portion of the proposed SFWF. Based on a review of the applicant’s visual impact analysis (App Supp, Exhibit R, response to RAI R2 (Follow-Up)), as many as 150 of the proposed SFWF turbines might be partially visible from the wayside. The applicant has stated that voluntary compliance with the BLM recommendation is unfeasible. Other wind turbines that are not part of the proposed SFWF might also be visible from the wayside in the future, including turbines from wind projects that are not within the Council’s jurisdiction. Turbines already constructed in Klickitat County, Washington, are now visible from the wayside.</p> <p>None of the proposed SFWF wind turbines would be</p>

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	located on BLM land. Based on a review of the applicable federal land management plans for the Oregon Trail, the Fourmile Canyon site is valued for the visible remnants of the trail. There does not appear to be a basis under the management plans for restricting the use of private property beyond the immediate surroundings of the trail remnants.
"The proposed 230kv above-ground transmission line could have a direct effect on BLM managed resources through the placement of towers on the physical remains of the Trail ruts."	In response to this comment and other comments that expressed a concern about locating a transmission line along Fourmile Canyon Road, the applicant revised the route of the proposed transmission line to bypass Fourmile Canyon. The proposed transmission line would avoid the visible remnants of the Oregon Trail in Fourmile Canyon. A recommended site certificate condition prohibits placement of any SFWF components on visible remnants of the trail.
"The transmission line would also be a visual impact on the Trail, specifically a negative impact to the integrity of the location, the feeling, the setting and association (again, criteria for eligibility). The transmission line would be a major intrusion to the visual characteristics of the Trail and the interpretive kiosk. It is recommended that the line be buried for whatever distance necessary to not make it a visual intrusion to people standing at the kiosk. Otherwise, this feature will negatively impact the characteristics that contribute to this segment being considered nationally significant as it relates to the National Register of Historic Places. If the transmission line cannot be buried, an alternative mitigation would be to move the transmission line to a location that does not intrude on the visual qualities of this segment of the Oregon Trail."	(see above)
<b>Dave Iadarola, Invenergy Wind North America LLC</b>	
<p>"Invenergy is proposing to build a project within 3 miles of the proposed project in the first quarter of 2008."</p> <p>"Invenergy has concerns regarding setbacks from the Willow Creek project. Since Invenergy will be constructing before Sheppard's Flat, we are concerned that the Sheppard's Flat Project will place turbines effecting Willow Creek's wind speeds. Invenergy would like to request a minimum setback of a 1 ½ miles."</p>	The proposed SFWF site boundary is at least a mile (and up to 3 miles) from the western boundary of the Willow Creek Wind project area. The distance between boundary lines should be adequate to ensure adequate separation between turbine locations within the two projects. The projects may share a small section of boundary along the southern edge of the Willow wind project area, but considering that the prevailing wind is generally from the west-southwest, the SFWF would not likely cause significant interference. If additional land were needed to buffer the Willow Creek project, Invenergy has had the opportunity to acquire it by lease or easement.
"Invenergy requests that Sheppard's Flat Project not interfere with any existing microwave paths between Bonneville Power Administration's Slatt substation and the Willow Creek Project by not placing any turbines that would disrupt this path between Willow Creek and the Slatt Substation."	There is no Council standard that requires or authorizes the Council to condition the site certificate to avoid "microwave paths." An appropriate method to secure protection of a "microwave path" between a point within the Willow Creek Wind project area and the BPA Slatt Switching Station would be to negotiate easements with the intervening landowners.

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<p>“Invenergy would like to keep the line of sight between Willow Creek and Slatt Substation clear. Invenergy requests that nothing be constructed that would disrupt this line of site.”</p>	<p>There is no Council standard that requires or authorizes the Council to impose on the certificate holder or the underlying landowners a requirement that “nothing be constructed” to interfere with any line of site between points within the Willow Creek Wind project area and the Slatt Switching Station.</p>
<p><b>Glenn Harrison, Oregon-California Trails Association</b></p>	
<p>“The Four Mile Canyon Oregon Trail rut site, south of Arlington, is in danger of damage from the latest proposal for the Shepherd’s Flat wind farm project. The Shepherd’s Flat proposal to erect towers and a transmission lines on and across the Oregon Trail would do irreparable damage in one of the most pristine settings that is available along any paved road.”</p>	<p>The applicant revised the route of the transmission line in response to comments. The proposed transmission line would avoid the visible remnants of the Oregon Trail in Fourmile Canyon. A recommended site certificate condition prohibits placement of any SFWF components on visible remnants of the trail</p>
<p><b>Stafford Hazelett</b></p>	
<p>“My primary suggestion is to route the electrical power transmission corridor along Highway 74 on the east side of the project rather than the proposed route along Fourmile Road on the west side.”</p> <p>Highway 74 already has overhead electrical power transmission along its alignment, is already contiguous to all but one of the proposed wind generation sites, and avoids any impact on the NRHP-eligible site. The developer’s proposals to place the transmission lines on the northeast side of Fourmile Road or underground do not reduce the impact. The underground proposal introduces new problems which may increase the impact. [Mr. Hazelett attached various maps and photographs that purport to show visible ruts on the east side of Fourmile Canyon Road as well as the west side.]</p>	<p>The applicant revised the route of the transmission line in response to comments. The proposed transmission line would avoid the visible remnants of the Oregon Trail in Fourmile Canyon. A recommended site certificate condition prohibits placement of any SFWF components on visible remnants of the trail.</p>
<p><b>Leslie Nelson, The Nature Conservancy</b></p>	
<p>Twenty-six rare and endangered plant and wildlife species are known to occur in the area, including the Washington ground squirrel, long-billed curlew, and the ferruginous hawk.</p>	<p>Based on the information in the application, there is only one State-listed threatened plant species (Laurence’s milkvetch) having a potential to occur within the applicable analysis area. There is no suitable habitat for this species within the site boundary of the SFWF. Three federally-listed threatened wildlife species were historically present in the analysis area (Canada lynx, gray wolf and grizzly bear) but are now considered non-existent within Oregon (individual gray wolves have been observed in the State, but not within the analysis area). Washington ground squirrel (WGS) is a State-listed endangered species that is currently present within the analysis area. The bald eagle is a State-listed threatened species present in the analysis area. There are three threatened or endangered fish species within the analysis area, but there is no suitable habitat for these species within the site boundary. Eight State Sensitive bird species (ferruginous hawk, Lewis’ woodpecker, sage sparrow, grasshopper sparrow, loggerhead shrike, long-billed curlew, Swainson’s hawk and bank swallow) and one State Sensitive mammal (white-tailed jackrabbit) were observed during wildlife surveys within the analysis area. Other State-Sensitive species that might occur within the analysis area (but which were not observed during the surveys) are the western toad, painted turtle, Barrow’s goldeneye and western small-footed myotis.</p>
<p>“The vegetation surveys were conducted in November</p>	<p>As described in the application, the Category 4 grassland</p>

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<p>and December of 2002, and appear to form the primary basis for the Habitat Category 4 assignment of large portions of grasslands (“4-GL”) in the northern section of the project area (Exhibit P, p. 32), versus a Habitat Category 3 (“3-GL”) or higher assignment.”</p> <p>“We request that prior to issuance of the permit, the vegetation surveys in the northern habitat be redone during the spring growing season using a commonly accepted standard protocol, results reviewed with ODFW, and that, if warranted, adjustments to Habitat Classifications be made.”</p>	<p>areas are generally in poorer condition than Category 3 grassland and have a lower proportion of native species. The habitat is characterized by poor or shallow soil or evidence of heavy grazing, fire, soil disturbance by livestock or vehicles and herbicide overspray.</p> <p>We ask the applicant to address “worst-case” impacts in the application, with the understanding that mitigation will address actual impacts, as determined from the final facility configuration. In developing the “worst-case” habitat impact analysis, the applicant used a facility layout in which 75-percent of the impact would be in Category 3 habitat. The purpose of this “worst-case” analysis was to ensure that the applicant could identify a sufficiently large area for mitigation to address the “worst-case” impacts. The actual facility impact on Category 3 habitat would be significantly less.</p> <p>A recommended site certificate condition requires the certificate holder to complete a habitat assessment of the final design footprint before construction, subject to consultation with ODFW and approval by the Department.</p> <p>In response to this comment, the applicant noted that nine quantitative vegetation sites were surveyed in 2002. An additional 37 sites were surveyed in 2007. The applicant further noted that assignment to habitat subtype and category relied on high-resolution aerial photography, observations throughout two years of work on the site by wildlife biologists, maps of the project area found in the Umatilla and Willow Creek Assessment and observations of actual use by wildlife species. In addition, the entire site was “ground-truthed” in the field in spring 2007 for accuracy of habitat assignments and additional refinement of subtype extent</p>
<p>“We request that newly-identified areas of irreplaceable or high quality native vegetation (Habitat Category 1 or 2) are removed from development plans.”</p>	<p>A recommended site certificate condition requires the certificate holder to avoid disturbance of high-quality habitat (including all Category 1 and 2 habitat) within the site boundary.</p>
<p>“The applicant’s draft Wildlife Monitoring and Mitigation Plan (Attachment P-8) does not include grassland avian surveys.”</p> <p>“Monitoring and mitigation plans have been developed for similar wind projects in Oregon - in particular, the Leaning Juniper II and Stateline projects. We request that pre- and post- construction survey techniques be required in a manner consistent with the Stateline and Leaning Juniper II Wind Projects.</p>	<p>A pre/post study design was possible at Stateline because of the special circumstances of that project. Two factors in particular made Stateline a special case. First, the developer knew in advance exactly what turbine type would be used for the project, and so the precise layout of the proposed facility was known before the site certificate was issued. This allowed for laying out survey transects before the facility was built. Second, there was a sufficiently large area of native grassland habitat to acquire statistically meaningful data.</p> <p>The results of the grassland displacement study at Stateline are inconclusive. The study found no statistically significant reduction in overall use by any of the four grassland species studied, although there was a statistically significant reduction in use by grasshopper sparrows within the first 50-meter segment from the turbine centerline. WEST noted that the sample sizes for grasshopper sparrow were very low. There was no apparent displacement of horned lark, savannah sparrow or western meadowlark. The limited reduction in use by grasshopper sparrows within the first 50-meters might have been due to the incomplete recovery of grassland</p>

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	<p>vegetation after construction disturbance and not due to the operation of the wind turbines.</p> <p>At Leaning Juniper II, the final location of turbine strings within the grassland area is not yet known. Although there is some pre-construction grassland use data, the data are not sufficient for a statistical post-construction comparison. Instead, post-construction data will be used for a qualitative analysis, focused on four special-status grassland bird species (grasshopper sparrow, long-billed curlew, loggerhead shrike and burrowing owl). The study is intended to detect “noticeable changes” in the presence and overall use of the area by these species, but a statistical gradient analysis of the pre- and post-construction data will not be possible.</p> <p>Grassland bird displacement studies were not required at Biglow Canyon or Klondike III, but instead additional mitigation area was added to the Habitat Mitigation Plans for these facilities (based on the voluntary consent of the applicants).</p>
<p>“We are particularly concerned with the possibility of a displacement effect by wind turbine operation and maintenance on the nesting long-billed curlew population.”</p> <p>“The applicant’s decision to not quantify the long-billed curlew’s nest density limits its mitigation responsibilities. As there is no baseline on LBC nesting density, only the <i>complete absence</i> of nesting long-billed curlews can form a basis for additional mitigation. And because no post-construction avian surveys are planned, it is not possible to quantify partial displacement effects. Further, if nesting density data are not obtained from this project, we are unable to evaluate regional-scale cumulative impacts of proposed wind projects on long-billed curlew populations (discussed further below).”</p>	<p>A recommended site certificate condition requires the certificate holder to avoid construction disturbance within a half-mile of curlew nesting habitat during the nesting season. A large curlew nesting area is already protected within the nearby Horn Butte ACEC.</p> <p>Not all wind projects have been required to collect data. Data from a single project in Oregon would be insufficient to answer the question whether wind projects cause a “regional-scale cumulative impact” on long-billed curlew populations.</p>
<p>The applicant’s Cumulative Impacts Analysis (Attachment P-6) was limited in scope to direct mortality of birds and bats; displacement effects of wind facilities on grassland birds and the fragmentation of grassland and shrubland habitat were not addressed.”</p> <p>“The recently concluded study at Stateline Wind Project (Erickson et al 2007b) demonstrated a small-scale impact of wind turbines on grasshopper sparrow use.”</p> <p>“We are aware of recently-concluded and current studies of displacement effects on breeding long-billed curlews at the Stateline project and other southeastern Washington wind farms. We request that these results be included in a more comprehensive Cumulative Impacts Analysis.”</p>	<p>See response above regarding the lack of displacement data from other facilities and the reasons why a pre-construction/post-construction study of grassland bird displacement effects is not feasible.</p> <p>See response above regarding the grassland bird displacement findings at Stateline.</p>
<p>“We request that the raptor nest monitoring be required as is outlined in the Leaning Juniper II Wind Project Wildlife Monitoring and Mitigation Plan.”</p>	<p>A recommended site certificate condition requires the certificate holder to implement the Wildlife Monitoring and Mitigation Plan. The plan requires raptor nest monitoring similar to that required under the site certificate for Leaning Juniper II.</p>
<p>“We recommend that the applicant provide spatially explicit locations of the unmapped Washington ground squirrel colonies identified in Attachment P-5a to ODFW.”</p>	<p>The “unmapped” WGS observations were in locations more than 1,000 feet outside of the site boundary for the project. As explained by the applicant in response to RAI P16: “To protect off-site colonies from interference and disturbance, no colonies outside of the site boundary and</p>

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	surrounding 1,000-foot buffer were mapped.” Locations of possible WGS colonies that are outside the site boundary should not be identified, in the interest of protecting these locations from disturbance.
“We request a construction cessation around known Washington ground squirrel colonies beginning in January and ending in June of each year.”	A recommended site certificate condition requires the certificate holder to avoid disturbance of all Category 1 and Category 2 WGS habitat. In addition, the recommended condition requires the certificate holder to avoid the area within 1,000 feet of Category 2 WGS habitat during the period in which the squirrels are active. This results in a 1,300 to 1,700-foot buffer from the Category 1 WGS colony area.
“Small mammal experts have expressed concerns that wind tower infrastructure may have a displacement effect on Washington ground squirrel colonies (E. Yensen, Pers. Comm., 10/26/2007). We request that the applicant remove the three proposed tower locations adjacent to the Washington ground squirrel colony (Map ODFW-2, Figure 8) from further consideration. Further, we assume that the applicant will apply for an Incidental Take Permit from ODFW, as was done by Leaning Juniper Wind Power II LLC.	<p>A recommended site certificate condition requires the certificate holder to avoid disturbance of all Category 1 and Category 2 WGS habitat. In addition, the recommended condition requires the certificate holder to avoid the area within 1,000 feet of Category 2 WGS habitat during the period in which the squirrels are active. This results in a 1,300 to 1,700-foot buffer from the Category 1 WGS colony area.</p> <p>It is unlikely that the proposed SFWF infrastructure would have a displacement effect, considering that there is already a farm road separating the Category 2 area from the proposed location of SFWF infrastructure. In addition, the rocky soil area and cultivated field adjacent to the Category 2 area make it unlikely for the WGS to use the area where the proposed facility infrastructure would be located. The proposed turbine locations are not within suitable habitat for WGS.</p> <p>ODFW has not advised that an ITP would be needed for this project. The area of potential disturbance is farther from the Category 1 WGS colony than is the case at Leaning Juniper II.</p>
“the Washington ground squirrel and burrowing owl surveys in the south portion of the project area were constrained to an area between 500 and 1000 feet around the proposed roads and turbines.”	The WGS/BUOW survey area included all suitable habitat within the SFWF site and a buffer 1,000 feet outside the site boundary. The survey covered an area of approximately 26 square miles.
“The Draft Wildlife Monitoring and Mitigation Plan proposes that perch guards, line markers, and other protective devices will be installed after a raptor mortality event from a wire strike or electrocution has been established (RAI #3, P15). However, the avian fatality monitoring will be active for only two years from commencement of operation. We request installation of such devices be required at time of construction, and not dependent on raptor mortality events.”	<p>A proposed site certificate condition requires that all aboveground transmission lines be constructed according to the guidelines of the Avian Power Line Interaction Committee to reduce the risks of electrocution and line strike.</p> <p>The proposed Wildlife Monitoring and Mitigation Plan for SFWF is similar to the plans previously approved by the Council for Leaning Juniper II, Klondike III, Biglow Canyon and Stateline. These plans have limited the duration of turbine area transect searches (two years has been the minimum, with extended periods where construction proceeds in phases); however, ongoing monitoring and reporting of avian fatalities has been required for the life of the facility. In addition, long-term raptor nest monitoring has been required for the life of the facility.</p>

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<p>“We request that thorough wildfire management and weed management plans be developed <i>prior</i> to site certification.”</p>	<p>A recommended site certificate condition requires the certificate holder to develop and implement fire safety plans in consultation with the local fire protection agencies.</p> <p>Another condition requires the certificate holder to implement a plan to control the introduction and spread of noxious weeds during construction and operation of the facility, consistent with the Gilliam County and Morrow County Weed Control Programs.</p>
<p>“The applicant’s Alternative Habitat Mitigation Plan includes reclassification of dryland wheat and some of the previously cultivated areas from Habitat Category 5 to Habitat Category 6. The applicant initially assigned Dryland Wheat as Habitat Category 5, noting it provides a significant source of raptor prey (Master Habitat Type Table, May 21, 2007 Response to ODOE). That reclassification is not ecologically justified, nor consistent with the Habitat Category 6 definition. This change in Category reduces the number of acres and type of mitigation required.”</p> <p>“ODFW Oregon Administrative Rules require a one-to-one mitigation ratio for most Habitat Categories. For projects of this nature and size, placed in areas of regionally significant conservation value, such ratios are not adequate to keep species from continued decline.”</p>	<p>The “reclassification” was proposed by the applicant to be consistent with the way previous wind facility applicants have classified cultivated fields. “Presently cultivated” land was classified as Category 6 in the findings for the Stateline, Klondike III, Biglow Canyon and Leaning Juniper II wind projects. The habitat classification was reviewed and accepted by ODFW.</p> <p>Based on the comments from ODFW (see above), the small area of currently cultivated dryland wheat within the proposed 435-acre mitigation parcel is classified as Category 5. The Department notes that the dryland wheat area covers less than one-percent of the parcel. The final mitigation area (to be determined prior to construction) is likely to include the higher-value habitat that exists within the parcel instead of the farmed area.</p> <p>The “reclassification” of dryland wheat within the mitigation parcel (which has been corrected to conform to ODFW’s recent comments) had no effect on the “number of acres and type of mitigation required.” The applicant did not “reclassify” any dryland wheat habitat within the site boundary. The applicant correctly classified all presently cultivated land within the SFWF site boundary as Category 5. In a revised habitat assessment, the applicant classified all previously cultivated land as either Category 4 or 5, depending on the condition of the vegetation.</p> <p>According to ODFW policy, mitigation for impacts to Category 5 habitat is not required to meet a “no net loss” standard. ODFW has recommended enhancement of ½ acre of habitat for every acre of direct impact to Category 5 habitat. ODFW reviewed and approved the Department’s proposed Habitat Mitigation Plan.</p>
<p>“The applicant’s vegetation monitoring plans and success criteria for the mitigation site are not described in sufficient depth. An annual breakdown of activities, similar to that identified the original Habitat Replacement Parcel Plan, should be developed for the Habitat Alternate Parcel.”</p> <p>“we request that the applicant secure adequate funds for management and monitoring of the mitigation area for the life of the facility.”</p>	<p>The Department treats applicant’s proposed mitigation plan (contained in the Application Supplement) as a first draft. The draft habitat mitigation plan undergoes a period of discussion and revision, involving ODFW, before a final proposed plan is produced. The final proposed plan is part of the draft proposed order and is written by the Department. If approved by the Council, the habitat mitigation plan becomes enforceable through a site certificate condition (we therefore do not believe that it is necessary to require separate “security” for the funds needed to implement the plan). A similar process applies to the Revegetation Plan, which addresses restoration of areas on the site that are temporarily disturbed during facility construction, and the Wildlife Monitoring and Mitigation Plan. The final proposed habitat mitigation plan will describe enhancement actions and success criteria.</p>

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<p>In the future, we request that the Council give the public at least two months to review and comment on such sizeable applications or revisions.</p>	<p>The siting process for the proposed SFWF began with the submission of the Notice of Intent in June 2006. The Department issued a public notice at that time, and invited public comments. The Department held a public informational meeting on the proposed project on July 28, 2006. The Department posted notice of the submission of a preliminary application on February 1, 2007, and a revised preliminary application on February 14, 2007, on the Department website in early 2007 and invited public comments. After a period in which the Department considered comments from the public and reviewing agencies and requested additional information from the applicant, the Department declared the application complete. The Department issued public notice on November 19, 2007, announcing the availability of the Application Supplement, and invited public comments, setting a deadline of January 10, 2008. Although comments received after this deadline cannot be assured of consideration in the draft proposed order, the Department continues to accept public and agency comments. The Department announces a final deadline for comments after the Department issues its Draft Proposed Order.</p>
<p><b>Nancy Gilbert, US Fish and Wildlife Service</b></p>	
<p>"The Service recommends that Caithness Shepherds Flat LLC develop an Avian Protection Plan for existing and planned wind energy projects to reduce migratory bird impacts from your installations."</p>	<p>The Department understands that the USFWS has previously developed Avian Protection Plans to address potential adverse impacts of transmission lines on protected avian species. Implementation and oversight of such a plan is beyond the scope of a site certificate for the proposed SFWF. Instead, the USFWS may choose to work directly with the applicant to develop such a plan for the proposed SFWF. Many recommended site certificate conditions address avian protection measures.</p>
<p>"The Service recommends that a formal long-term monitoring plan and agreement be developed between the Service, Oregon Department of Fish and Wildlife, Caithness Shepherds Flat LLC, and other appropriate parties to assure that the proposed turbines do not further exacerbate cumulative adverse impacts on birds or bats along the Columbia River corridor."</p>	<p>The USFWS is proposing a "long-term monitoring plan" that does not involve the Council or the Department. This proposal is regional in scope, covering wind development in Oregon and Washington along the Columbia River corridor. The USFWS should work directly with Oregon and Washington wildlife agencies and other parties that the USFWS deems appropriate together with wind developers in Oregon and Washington to discuss the scope and implementation of a long-term monitoring plan. This discussion should include BPA. To date, however, the USFWS has not developed a regional long-term monitoring plan.</p>
<p>"For the Pacific Northwest region, the hoary bat (<i>Lasiurus cinereus</i>) and silver-haired bat (<i>Lasionycteris noctivagans</i>) appear to be at the greatest risk from collision with wind turbines. In general, long-term bat impacts from the proposed wind power facility are unknown. Bat surveys should be completed for the Shepherds Flat Wind Farm to determine from a regional perspective the potential risk to these local populations. Surveys should also be completed to determine patterns of use, local movements through the area, and the response of bats to turbines, individually and collectively. Specifically, the recommended surveys should be designed to determine: 1) species occurrence and diversity; 2) activity levels (e.g., relative abundance, seasonal timing, daily timing); and 3) potential migration</p>	<p>Based on the available data from bat fatality monitoring at wind facilities in the region, the impact on hoary bats and silver-haired bats appears to be low. WEST has calculated the regional mean average fatality rate to be 1.43 fatalities per year per MW. Silver-haired bats and hoary bats generally occupy forested habitat, which is rare in the Columbia Plateau region and does not exist within the habitat analysis area for the proposed SFWF. The Department is aware that there are gaps in scientific information regarding regional populations and distribution of these bat species, bat behavior and migratory patterns. Development of the scientific knowledge about individual species is appropriately carried out by the scientific community, colleges and universities, government wildlife agencies and</p>

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routes (CBWG 2006).”	organizations such as Bat Conservation International and the Bats and Wind Energy Cooperative. The research effort that would be needed to fill regional knowledge gaps is beyond the scope of a site certificate for the proposed SFWF.
“Inventory and evaluate rock outcrops, palisades, and/or caves associated with Columbia River corridor for bat use, including maternity, hibernation, migration, and swarming use. Provide adequate protective conservation and management actions, including buffers to avoid disruption during critical bat use periods.”	Suitable habitat for bat use (maternity, hibernation, migration and swarming) does not exist within the site boundary.
“Design future bat fatality search methodology to search a portion of the turbine each day rather than all turbines on one day, to balance variation in timing of fatalities (Arnett, 2005). Originally designed to monitor annual or seasonal avian fatality rates, current post mortality monitoring protocols with infrequent search intervals (i.e., 14 day interval) may provide an important source of bias when developing bat fatality estimates. Daily observations may explain bat fatality or activity at turbines by taking into account ephemeral, abundant food resources at wind turbine sites (especially near a canyon rim), weather pattern, and/or wind speed.”	Given the low rate of bat fatalities that appears to be characteristic of wind energy facilities in the Columbia Plateau region, the Department does not believe that changing the search methodology to a more rigorous protocol, as proposed by USFWS, is warranted. If fatality monitoring at the SFWF shows that the threshold of concern for bat species is exceeded, the plan provides for additional mitigation or for additional, targeted data collection. The Department, in that case, would consider the search methodology suggested by the USFWS in making recommendations to the Council.
“Design future searcher efficiency trials to avoid using small birds to represent bats. Visual indicators including blowing feathers, and/or contrasting colors during efficiency trials may be a source of bias to searcher efficiency trial and results.”	The proposed Wildlife Monitoring and Mitigation Plan requires the use of legally-obtained bat carcasses in the searcher efficiency trials when they are available.
“Turbine siting should avoid placing turbines near active and non-active raptor nest sites. Many nest sites currently categorized as “non-active” are often used as alternate nest sites by nearby raptors. Inspect non-active nest sites for activity and adjust timing and location of tower assembly and erection to avoid nest failure or abandonment of both active and alternate nest sites.”	The applicant has classified all known trees or structures with active or inactive raptor nests as Category 1 habitat. A recommended site certificate condition requires the certificate holder to avoid disturbance of all Category 1 habitat. Another recommended condition requires the certificate holder to conduct pre-construction surveys to determine whether there are any active nests of Swainson’s hawk, ferruginous hawk or burrowing owl within 0.5 miles of any areas that would be disturbed during construction and to avoid disturbance during the breeding season within a 0.5-mile buffer of any active nests that are found.
“Raptors soaring along bluffs of the Columbia River and Willow Creek are utilizing ridge lift created when wind hits a slope and is forced upward. Raptors often circle to gain lift in these areas making them vulnerable to obstacles such as turbines along a rim. The Service recommends 1,320 foot (1/4-mile) setback from the bluff edge.”	Cliff rim or bluff features occur along the northern site boundary above the Columbia River and at three locations along the eastern site boundary above Willow Creek. Raptors soaring along bluffs concentrate in a narrow band along the edge (see Johnson et al., <i>Wildlife Monitoring Studies for the Seawest Windpower Project Carbon County, Wyoming</i> , August 9, 2000, p. ii). A recommended site certificate condition requires the certificate holder to avoid placing turbine towers within 250 feet of bluff edges.
“Support and contribute to Bat Conservation International or other bat conservation groups in the Pacific Northwest for research to better understand impacts to bats and continue to develop solutions.”	If fatality monitoring at the SFWF shows that the threshold of concern for bat species is exceeded, the plan provides for mitigation, which might include contributions toward bat research.
“Identify within the project area where pole configuration(s) present a current electrocution risk. Describe specific steps that have been taken, or are planned for the future to reduce or remove the threat of electrocution to raptors in high and low risk areas. Describe existing opportunities to further reduce the risk of raptor electrocutions, in order to reduce the cost of	A recommended site certificate condition requires the certificate holder to design all aboveground transmission lines following the most current suggested practices for avian protection on power lines published by the Avian Power Line Interaction Committee.

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prevention (e.g. using routine inspection and maintenance visits to install raptor protection devices on low and high risk configuration poles).”	
“Turbine construction should be encouraged to occur outside the breeding season for migratory birds when practical.”	The USFWS comment does not provide specific guidance regarding the breeding season for particular migratory bird species. Migratory birds would not be expected to utilize habitat within the site boundary for nesting and breeding activities.
“To mitigate direct and cumulative impact to birds and bats, consider an option to establish a wind energy mitigation fund or fee system to address direct and cumulative effects by protecting and improving habitats in the region. These mitigation funds could be leveraged or combined with other grant programs (e.g., Oregon Watershed Enhancement Board) to offset bird and bat mortalities over the lifespan of the wind energy development.”	The Department believes that further regional discussion is needed to address the concept of a mitigation fund. Such a system is not currently in place, however, and it is not an available option for mitigation for the potential impacts of the SFWF. The Department recognizes that there are difficult issues that must be resolved to make such a fund or fee system workable. These issues include fair apportionment of the fees among all wind projects (most wind development in the region is not within Council jurisdiction); regulatory oversight to ensure that the funds are used for habitat protection and improvement; and the financial resources and administrative structure that would be needed to sustain long-term management of the fund.
<b>Jill Barker</b>	
“This project definitely needs to have more comprehensive bird, bat and insect studies and to have this data collected, compiled and analyzed impartially and thoroughly in relation to all the other wind facilities, both proposed and existing, in this region that includes Oregon and Washington states.”	The applicant has addressed the potential impacts of the SFWF on wildlife and wildlife habitat primarily in Exhibits P and Q of the application. The applicant has provided comprehensive cumulative impacts analysis, based on the available data collected at operating wind energy facilities in Oregon and Washington (App Supp, Attachment P-6).
“This is why an Environmental Impact Statement (EIS) should not only be required to establish the regional cumulative effects of wind power, but it would be negligent and tragic to not complete an EIS on this and the other wind power projects in the region now that the Northwest has reached its 6000 MW saturation level.”	An EIS is not part of the State siting process. The National Environmental Policy Act (NEPA) requires an EIS for certain federal actions affecting the environment. State approval of a site certificate is not a federal action.  Nevertheless, an applicable EIS has already been done. The Bonneville Power Administration (BPA) is a federal agency that is subject to NEPA and is conducting a tiered Record of Decision review of substation facilities that BPA will construct at the existing Slatt Switching Station to serve both the SFWF and PPM Energy’s Pebble Springs project. The Record of Decision review supplements the Business Plan Environmental Impact Statement published by BPA in June 1995 ( <a href="http://www.efw.bpa.gov/environmental_services/Document_Library/Business_Plan_EIS/">http://www.efw.bpa.gov/environmental_services/Document_Library/Business_Plan_EIS/</a> ).
“Under Bonneville Power Administration’s (BPA) Northwest Wind Integration Action Plan’s WIF document 2007 - 01, establishing more than 6000 MW of generating capacity will require a total revamping of the electric grid’s transmission lines and thus more new gas-fired plants will be required to pick up the slack when the wind is not blowing or when the wind speeds leave the turbines idle. Presently the system has at least 5600 MW online or approved. This project alone would push the capacity over the 6000 MW threshold, requiring a new gas-fired plant to be built to back-up its intermittent wind energy. For every 1200 MW of wind energy “penetration” (operating over the 6000 MW threshold), 1200 MW of gas-fired plants must be built for back-up in the NW Plan.	The comment raises the question of whether additional electric power generation is needed at this time in the region. Under Oregon law, the Siting Council is prohibited from establishing a standard requiring a showing of need or cost-effectiveness for generating facilities (ORS 469.501; see also ORS 469.310).  Availability of adequate transmission is addressed through the marketplace as different generating facilities negotiate and compete for transmission services. If a developer were unable to contract for adequate, long-term transmission services due to constraints in the transmission system, the developer would be unable to obtain the construction financing and power purchase agreements necessary to build the project.

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<p>Wind power plants require 100% back-up by conventional energy plants due to their intermittent, unreliable nature, and the NW Wind Integration Action Plan's document explains this clearly and has chosen gas-fired plants as their back-up."</p>	<p>The issues discussed in the Northwest Power and Conservation Council's publication (Northwest Wind Integration Plan) referenced by this comment are technical issues of integration of wind into the transmission system and estimating the costs associated with wind integration. These matters are outside the scope of the Siting Council's authority and responsibility in deciding whether a proposed energy facility meets the requirements for a site certificate.</p>
<p>"Our state and federal wildlife agencies have been critical and concerned about the windpower industry's declared (and biased) "environmental studies" not only because the wind plant proponents have not been properly consulting with the wildlife agencies, but also because the studies have often not been adequate, appropriate or complete, and because wrong conclusions were often drawn from existing data."</p>	<p>The ODFW and USFWS speak for themselves. These agencies have not expressed to the Department any concern that this applicant (or the applicants for previously-issued site certificates) have failed to consult properly with them. Nor have these agencies characterized the wildlife studies as "often not...adequate, appropriate or complete." The wildlife agencies have not identified any case where "wrong conclusions" were drawn from the data.</p>
<p>"Industrial windpower facilities should NEVER be placed any closer than 3 miles from any home and 5 miles from any town."</p> <p>"The legal noise levels from the turbines must be established by the state and not deviated from with these standards always being strictly adhered to."</p> <p>"Other serious concerns of local residents are the health effects and health risks from the constant audible noises from the turbines causing a wide range of health problems, as well as the low frequency impulse sounds emitted by the turbines which can cause cancers and heart, pulmonary and neurological diseases. Another health concern is the shadow flicker from the sun shining from behind the blades creating a strobe-like effect which can cause seizures, dizziness, disorientation, headaches and nausea in people and animals."</p>	<p>Setbacks of 3 miles from a home and 5 miles from a town are not required under applicable land use ordinances or statewide planning goals. A recommended site certificate condition addresses setback distances that the Department believes to be necessary for public safety.</p> <p>The DEQ noise control regulations were established to address the possible health effects of exposure to noise. The applicant has demonstrated that the proposed SFWF could be designed in conformance with the applicable noise limits. A recommended site certificate condition requires the certificate holder to demonstrate, before beginning construction, that the final design configuration of the SFWF would comply with the applicable noise limits.</p> <p>"Low-frequency" and "impulse" sounds are two different types of sound. Low-frequency sound associated with wind turbines has been described (Rogers et al., <i>Wind Turbine Acoustic Noise</i>, National Renewable Energy Laboratory, amended 2006) as:</p> <p style="padding-left: 40px;">Sound with frequencies in the range of 20 to 100 Hz...mostly associated with <i>downwind</i> rotors (turbines with the rotor on the downwind side of the tower). It is caused when the turbine blade encounters localized flow deficiencies due to the flow around a tower.</p> <p>Rogers describes impulse sound, in contrast, as:</p> <p style="padding-left: 40px;">...short acoustic impulses or thumping sounds that vary in amplitude with time. It is caused by the interaction of wind turbine blades with disturbed air flow around the tower of a downwind machine.</p> <p>Modern commercial wind turbines (such as those that would be used in the SFWF) are designed with upwind rotors. This design reduces the generation of low-frequency and impulse sound associated with early downwind designs. Lower rotational speed and blade pitch control in modern turbine designs further result in lower sound generation.</p> <p>The BLM recently addressed the question of "shadow</p>

Application Comments and Department Responses

Comment	Response
	<p>flicker” in its Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States (June 2005): “Shadow flicker refers to the phenomenon that occurs when the moving blades of wind turbines cast moving shadows that cause a flickering effect (Manwell et al. 2002). When the sun is behind the blades and the shadow falls across occupied buildings, the light passing through windows can disturb the occupants (Gipe 1995).” There are few residences within the SFWF site, and the applicable noise limits will control the distance between turbine towers and residences. The phenomenon of “shadow flicker” is unlikely to occur, or to occur rarely, at any residence. The BLM concluded that the flickering effect might be considered an annoyance but that the frequency of flicker generated by modern three-bladed wind turbines (less than 1.75 cycles-per-second) was “below the threshold frequency of 2.5 Hz, indicating that seizures should not be an issue (Burton et al. 2001).”</p>