TCC
Pre-Filed Testimony
Linda Lehman
EXH-5822_R

Testimony from Linda Lehman

Benton City has reviewed the Application for Site Certification and is submitting comments to the EFSEC based on its review of these documents. The points we make on the Application for Site Certification closely follow the comments and issues we identified in our comments on the DEIS for the SEPA process. The ASC and the DEIS utilize the same set of reports and documentation.

Benton City supports the use of green energy alternatives over carbon-based sources. The City has been proactive in developing solar energy to off-set costs of operating its Wastewater Treatment Plant Laboratory and Sewer Lift Stations. The solar array was installed by the City in 2017.

Benton City is not to be considered a NIMBY complainant; rather, the City is submitting comments that point to areas that affect safety, economic and socioeconomic factors that have not been considered in the Application.

Benton City has a right to expect a fair and unbiased adjudication and SEPA process; however, the City finds that there are equity issues. The City is identifying places in the ASC where elements have not been identified analyzed, do not provide adequate information, and do not offer reasonable alternatives.

We believe the proposed action options in the ASC are IN conflict with city development goals, are inconsistent, and will hinder or impede city planned development.

Comment #1 - The Application does not consider economic effects to Benton City regarding the planned I-82 development adjacent to the Horse Heaven Hills Wind Turbine Project.

We strongly disagree with the Applicant's conclusion statement that the project will not materially endanger the health, safety, and welfare of the surrounding community to an extent greater than that associated with any other permitted uses in the applicable zoning district.

Project Description

For the past 15 years, Benton City has been engaged in efforts to annex and/or sell City-owned property on the south side of I-82. This area is comprised of 212 acres and is needed by Benton City to provide additional light industrial acreage, a hotel, and additional mixed residential housing. The initial development entailed creation of a force main and additional lift stations to bring water and sewer across the Yakima River to support the development. This action was contracted in 2008 at a cost of $787,542.39. This work allowed sewage that had been previously truncated on the south side of the Yakima River during flooding, to be piped directly to the Wastewater Treatment Plant on the north side of the river.

The current phase of the I-82 Development Project has been underway since approximately 2018. It is a joint project with the Department of Natural Resources (DNR) and the City of Benton City on State Trust Lands that were annexed into Benton City. Recently, the port of kennewick has offered funding to the city to complete its zoning map and to complete training for staff in implementing new design standards. A Subarea Plan has been completed by AHBL, Inc., is based on feasibility studies by Eco Northwest, and incorporates City designs by world-famous designers, Michael Mahaffey and Laurence Quamar. The Subarea Plan has been reviewed by the DNR and will be incorporated into the Benton City Comprehensive Plan in early 2023.

The Subarea Plan contains preliminary designs to accommodate additional residences, allow for more light industrial space (Benton City's current Industrial Park is full), and provide a high-end lodging/dining experience with outstanding views that cover 180 degrees from west to east. These views currently include the Horse Heaven Hills near Anelare Winery to the West, Red Mountain to the north, and eastward down the valley toward Goose Ridge. Currently, design standards are under development preceding DNR's release of the property for sale and/or ground lease. The Subarea Plan is intended to attract more visitors to the Red Mountain AVA, provide upscale lodging, and provide services to local wineries, such as bottle or cork distribution centers, and manufacturing of pumps and valves as well as other wineries or tasting rooms.

To encourage light industrial tenants to the development, the City chose to run sewer and water along Jacobs and Field Roads where the light industrial development is planned. This work is slated to start in 2023 at an additional cost of approximately $360,000.00.

This development has moved forward at a significant cost to the City, and the City obviously wants to protect its investments and need for expansion. The City does not want to compromise its standards to do so. Horse Heaven Hills views will have several very prominent Wind Turbines that would impede the natural beauty that is planned to be emphasized in the development. Several large Wind Turbines are located less than a mile distance, as shown in the Application, and would no doubt impede views and devalue the City's investments if surrounded by hundreds of Wind Turbines.

Conclusion: Wind Turbines within a mile of the planned development will materially endanger the health, safety, and welfare of the surrounding community to an extent greater than that associated with any other permitted uses within the applicable zoning district. Further, it is inconsistent with Benton County Conditional Use Permit Requirements.

Recommendations:

1. Complete financial studies that would consider the development and postulated losses to the taxpayers of Benton City due to current Application for Site Certification.
2. Remove the four (4) (or more, based on Options), Wind Turbines from the northern edge of Horse Heaven Hills from the ASC;
3. Consider expanding the solar array to balance power losses from removal of wind turbines.

Comment #2 - The Union Pacific Railroad Bridge and Trail Hub Project loss of recreation and financial impacts of this project have not been addressed in the Application .

Requirements:

The ASC references Benton County Conditional Use Permit Requirements and Project Analysis

> *Item (b) Will not materially endanger the health, safety, and welfare of the surrounding community to an extent greater than that associated with any other permitted uses in the applicable zoning district.*

Under the Washington State Environmental Policy Act, the Adjudication will feed fact and legal conclusions into the SEPA process and facilitate a recommendation to the Governor that weighs the likelihood of occurrence with the severity of an impact (Washington Administrative Code [WAC] 197-11-794) and considers several factors when determining the significance of identified potential impacts (WAC 197-11-330 and WAC 197-11-794).

These impacts were qualitatively assessed based on the method of analysis described in Appendix S Economic Impact Assessment in the Updated ASC as well as in the DEIS Section 4.12.1., Appendix 4-16-1 Technical Review of Horse Heaven Hills Wind Farm, LLCs Economic Impact Analysis.

The City disagrees with the Applicants conclusion statements that the project would not hinder or discourage the development of permitted uses on neighboring properties in the applicable zoning district as a result of the location, size or height of the buildings, structures, walls, required fences or screening vegetation to a greater extent than other permitted uses in the applicable zoning district.

We find flaws and have issues with the identification, discussion and analysis of Project Impacts on Land Use in the Application and the DEIS Section 4.8.

The adjudication process for the Project would allow interested parties, including neighbors, to participate in the project's review and conditions may be placed upon the Project's construction and operations that address issues involving development of permitted uses on neighboring properties.

Project Description

Since 2017, the City has sought to purchase the historic Union Pacific Railroad Bridge, which has been abandoned for nearly a century. The purpose of the Project is to link Benton City to more wide-ranging trail systems, such as Friends of Badger Mountain Trail system, Tapteal Greenway Overland Trail systems, Benton County proposed trail through Badger Canyon and other envisioned trail systems located along ridgelines of Horse Heaven Hills.

Negotiations have been ongoing for several years with the Union Pacific Railroad and cost estimates have been prepared for inspections for environmental effects, and structural integrity of the bridge. The City has proactively purchased eleven (11) acres of park land leading up to and adjacent to the bridge. In doing so, cultural surveys were performed, and several land swaps and boundary line adjustments were made. Recently, there has been increased interest in acquiring the bridge from several bike clubs and hiking enthusiasts, as well as from Benton County. This increased interest has led Congressman Newhouse to select the project for inclusion in the recent Omnibus bill, which has now passed. The City should receive Federal appropriation of $2 million dollars toward the purchase and development of the Railroad Bridge.

The abandoned Union Pacific Railroad Bridge that crosses the Yakima River on the eastern side of Benton City was closed in the 1950s and has been abandoned ever since. Utilizing the bridge as a Rails-to-Trails connector was envisioned approximately seven (7) years ago, as its full potential became apparent. Vision for the project includes a City Park at the west end of the bridge with connection to the Red Mountain Winery Trail to the east. The Red Mountain Winery Trail will be the most westerly leg of a Trail System of approximately 15 miles that comprise the current and planned Badger Mountain Trail System. The Trail System provides access to local cities such as Richland and Kennewick.

Quality of Life and Safety – Quality of Life in the greater Benton City area and within the County is enhanced by providing access to miles of walking and cycling trails, and the bridge provides connectivity to existing trails to the east Western Benton County cycling route(s) access will also be enhanced via a safer route for cyclists traveling from the east. Currently, cyclists must ride on a two-lane State Road with no bike lanes, enter a round-about and then cross a vehicular bridge with very little distance (approximately two feet) between the traffic lane and guard rail, which is dangerous.

Tourism, Education, and Economic Development – The Railroad Bridge connection will allow Benton City to enjoy increased tourism which will support businesses, especially restaurants and retail establishments. It will also encourage family outings along the bike path for discovery of Benton City's unique offerings. These offerings include scientific kiosks such as the Uranus Orbital Marker (part of the Hanford Reach Solar System SILAS Education Project) and wildlife information about natural species that inhabit this area of the Yakima River, in cooperation with the Washington Department of Fish & Wildlife. Historical information is being developed with regard to history of agriculture located at the first irrigation paddlewheel.

Providing a healthy walking and cycling experience also supports Red Mountain wineries by providing various family experience that encourage visitors to stay longer and explore other activities along the river such as swimming, fishing, kayaking and paddle-boarding at the start of the Tapteal Greenway River Trail.

Project goals are to create a significant community impact in terms of quality-of-life, improved tourism, education, safety, and economic development. These goals are measurable by increased tourism via records from Benton City Chamber of Commerce Tourism Office and records regarding social media's number of contacts. Other measurable items are property tax increases, housing starts, numbers of created jobs, and overall increase in Business Licenses.

Conclusion

The Benton City Railroad Bridge and Regional Trail Development, in terms of economics, or loss of recreation, has not been considered or studied in either the Application or the DEIS.

Loss of trails through Badger Mountain, McBee Grade and other areas of Horse Heaven Hills will diminish the City's return on investment from fewer hikers due to positioning of Wind Turbines, loss of natural beauty, loss of habitat and bird mortality.

Recommended Stipulations:

1. Complete an economic study that analyzes the loss of hiking trails up Badger Canyon and along other ridgelines that can affect the number of hikers and quality of their experiences.

These impacts will affect both economic and recreational investments that have been made by the City of Benton City.

2. Remove the four (4) (or more, based on Options) Wind Turbines from the northern edge of Horse Heaven Hills; or
3. Expand the solar array to accommodate the loss in output.

Comment #3 – The Application and the DEIS do not address the safety of fire suppression aircraft over ridgelines in the Horse Heaven Hills, northern areas of the project, or in Webber and Badger Canyon.

Aerial firefighting will be seriously hindered if there are 499-foot wind turbines in close proximity to the flight paths of the aircraft and helicopters.

Regulation:

11.17.070(q)(7). All Wind Turbine(s) must comply with the Federal Aviation Regulations Part 77, Objects Affecting Navigable Airspace, as currently in effect or as hereafter amended, including but not limited to, providing such notices to the FAA as required thereunder and compliance with all requirements or prohibitions imposed by the FAA on the applicant's proposal.

Description

Horse Heaven Hills are subject to numerous wildfires that may or may not influence the Wind Turbines. However, neglected in the Application and the DEIS is the huge safety risk that these Wind Turbines pose on fire suppression aircraft, especially near ridgelines. Fire District 2 often utilizes two types of aircraft during fire suppression work: fixed wing (Air Tankers) and helicopters. The Fire District coordinates with Washington State Fish and Wildlife and with the US Bureau of Land Management (BLM) through specific operating procedures. Representatives of either agency would call the Fire District to inform what type of aircraft is needed. It is not an uncommon occurrence in Horse Heaven Hills.

Attached is a photograph of a recent fire which almost engulfed Anelare Winery on McBee Grade, the location of one of the proposed Wind Turbines. As you can see from the photograph, there is considerable smoke produced by this fire. Firefighters focused on the ground and in drenching hot areas. Wind Turbines may be obscured to low altitude planes. Maneuverability is critical and should not be hampered by trying to maneuver their way through the numerous proposed Wind Turbines at this very ridgeline and also through the steep slopes of Weber Canyon.

An additional concern is aircraft being forced to fly over urbanized areas and major roadways, as this practice discouraged for safety reasons. If Wind Turbines are located on the ridgeline, aircraft will be forced to fly over more populated areas and along I-82 or Weber Canyon Road. Firefighters expressed concern that some things or items may fall into those areas or that the aircraft would be a major distraction to those driving on highways at higher speeds.

A commonly used aircraft is called a SEAT. A single engine airtanker, or SEAT, is the smallest airtanker. These aircraft can deliver up to 800 gallons of fire retardant or water to wildland firefighters on the ground and are ideal for wildfires in lighter fuels, like grasses and light brush.

A "Type 2" aircraft is the fire suppression helicopter. It is commonly known as a "UH-1H Huey". This type of aircraft is designed to carry up to nine firefighters plus the crew and the bucket that is utilized for water drops carries between 300 and 600 gallons of water.

Further, red flashing lights may be confused with emergency vehicles or hot spots and could prove to be a distraction to pilots.

Working Wind Turbines could cause embers to spread down gradient areas, such as Benton City or residences in Badger Canyon.

The Updated Application Appendix P Emergency Response Plan and Table 3.8-1A in the DEIS states do not adequately address fire prevention. Both call for the preparation of a Fire Prevention Plan.

At the present time, Applicant's documentation does not appear to satisfy or be consistent with Benton County LU G 6 Policy 14. LU Goal 6.

> *Policy 14: Support and encourage the use of and application of Firewise principles and other fire risk reduction measures consistent with the Benton County Natural Hazard Mitigation Plan and Community Wildfire Protection Plan to reduce fire risk for urban development, urban subdivisions, rural subdivisions and large rural developments susceptible to wildfires. Encourage the implementation of the Firewise principles, or similar best management measures.*

At the present time, Applicant's documentation does not appear to satisfy or be consistent with Benton County LU Goal 2

> *Policy 1: Limit developments in areas with higher risk for natural disaster or geologic hazard unless it can be demonstrated by the Project proponent that the development is sited, designed, and engineered for long term structural integrity and that life and property on- and off-site are not subject to increased risk as a result of the development.*

This is a photo of the DC-10 flying over the house of the Mayor of Benton City on June 13, 2023.

This is a photo looking at the across Interstate 84 towards the ridgeline of the Horse Heaven Hills (on the project) from the house of the Benton City on June 13, 2023.

This is a photo looking at the across Interstate 84 towards the ridgeline of the Horse Heaven Hills (on the project) from the house of the Benton City on June 13, 2023.

Conclusions:

The Application fails to recognize and adequately address the significant and increased risk of harm faced by Benton City residents from the proposed HHH Wind Turbine Project, especially from fire hazards.

The turbines will affect the ability of firefighting aircraft to perform effectively, and further endanger the pilots of these aircraft. The Draft Hazard Mitigation Plan is silent with respect to air defenses when it comes to fire fighting. Rather it concentrates on protecting or evacuating their facilities and clearing some roads between the turbines for firefighting vehicles.

Recommended Stipulations:

1. Discuss maneuverability requirements with the State and/or Federal fire pilots regarding their procedures and common practices for suppression activities.
2. At a minimum, move Wind Turbines back from ridgelines and existing housing so that pilots do not face additional risks of working around Wind Turbines.

References:

Excerpt and Photos from Tri-City Herald, July 15, 2016, follow.

Fire Threatens Washington Winery, Vineyard Near Red Mountain

July 15, 2016 by Great Northwest Wine 1 Comment

Skyfall Vineyard, owned by Precept Wine in Seattle, sits just below the aftermath of a 4,000-acre wildfire. The blaze threatened the vineyard before it was brought under control. (Photo by Niranjana Perdue/Great Northwest Wine)

KIONA, Wash. – A 4,000-acre wildfire near Red Mountain threatened one winery and smoked a handful of Chardonnay vines before being brought under control early this morning.

Fifteen agencies battled the blaze, according to the Tri-City Herald. It came within about 100 yards of Anelare Winery in the unincorporated community of Kiona, which sits across the freeway from famed Red Mountain. The fire started about 5 p.m. Thursday near Yakitat Road in the Yakima Valley and was brought under control about 4:30 a.m. today.

Kim Gravenslund, general manager of Anelare, said she did not know the cause of the fire, which came within a few hundred feet of the winery.

“It was moving fast,” she told Great Northwest Wine. “It was a pretty intense fire.”

Gravenslund drove to the winery about 11 p.m., and the entire southern side of Interstate 82 was lit up by flames. Anelare opened its Kiona tasting room two summers ago.

Across the road from Anelare and north of an irrigation canal is Skyfall Vineyard, owned by Precept Wine in Seattle. David Minick, director of vineyards for Precept, said the 125-acre vineyard was threatened by the flames and a handful of Chardonnay vines were singed by the blaze, which came within fewer than 100 feet of the southern edge of the vineyard.

A Benton County firefighter was walking along the canal Friday afternoon, looking for hot spots amid torched sagebrush.

Gravenslund said the fire didn’t seem to be hurting business. In fact, she said the tasting room traffic has been brisk.

Winemakers Watch Blaze From Across River

Firefighters drop retardant on flames that threaten Anelare Winery and Skyfall Vineyard along the northern flanks of the Horse Heaven Hills in the lower Yakima Valley near Benton City, Wash., on Thursday, July 14. (Photo courtesy of Larry Oates)
Larry Oates of Sleeping Dog Wines in Benton City monitored the fire from his winery across the Yakima River.

“It was charging to the west, and somewhere around nightfall the dynamics changed,” Oates said. “The wind came from the west and pushed the first to the east like a racehorse.”

Oates said he was impressed by the courage of firefighters who were touching off the backfires above Anelare.

“They were running almost vertically up the hill with their cans of kerosene, with the fire line maybe 30 feet away from them,” Oates said.

Oates said he couldn’t help but remember the evacuation of the entire town of Benton City in the face of the massive fire of June 2000 that scorched 163,000 acres on the Hanford Reach National Monument and burned 25 homes in Benton County.

"This never crossed the freeway, and it looked closer that what it was," Oates said. "And we had about 1,000 acres of nicely irrigated alfalfa between us and this fire."

Filed Under: News Tagged With: featured, ticker

Comment #4 – The Viewpoint Analysis in the Updated Application Aesthetics Section 4.2.3 and Appendix Q Visual Simulations and the DEIS Section 4 and Table 4.10-1 do not accurately identify, describe, evaluate and score Benton City, and the only KOP viewpoint selected is on the main street in town and partially or completely obscures some of the Wind Turbines. The Applicant fails to identify even on Key Observation point at higher elevation areas with higher residential populations and also fails to identify any Key Observation points along Sunset Road, in the heart of the Red Mountain AVA.

Regulations: Washington State Environmental Policy Act. EFSEC weighs the likelihood of occurrence with the severity of an impact (Washington Administrative Code [WAC] 197-11-794) and considers several factors when determining the significance of identified potential impacts (WAC 197-11-330 and WAC 197-11-794. The impact rating is summarized in Table 4.10-1.

Description:
The viewpoint selected for Benton City was not representative of the City nor the bulk of residences located within the City. The location selected was in the middle of the main highway SR 225 with two of the closest proposed primary turbines obscured from view. The location should have been selected with an unobstructed view. Many residences in the City sit at higher elevations and would be viewing many more Wind Turbines than the one shown.

The Application and the DEIS Table 4.10-9 provides an overview of impacts from each KOP/viewpoint and includes the viewer position, extent of the horizontal view occupied by the Project, level of contrast, and magnitude of impact.

Benton City is given as Key Viewpoint 9 and indicates that the Level of Visual Contrast is moderate, and the Magnitude of Impact is medium.

The City does not agree with the impact description which are as follows:

> *The proposed Wind Turbines would be intermittently screened by development within Benton City, with partial screening of the Project features occurring where the Horse Heaven Hills would partially obstruct views to the south. Where visible, there would be a limited number of turbines in view, as depicted in the visual simulation.(a) The presence and motion of the turbines would attract attention but would appear codominant with other commercial and residential developments. Other areas within the city may have more expansive, unobstructed views of the proposed Wind Turbines, similar to KOPs 2 and 10. The Project would expand the extent of view occupied by moving Wind Turbines and would be prominent from this inferior viewing angle, resulting in medium, long term impacts on views.*

Conclusion:

The City concludes that the Ratings in the Application and the DEIS are not appropriate or accurate due to the obscured viewpoint utilized, and descriptive assumptions that are not representative of Benton City.

Recommendations:

1. Repeat the visual analysis with several more additional representative viewpoints and including residential areas in Benton City and along Sunset Road as well as the I-82 Project location (which is located within one (1) mile of the Wind Turbines).
2. Remove the Wind Turbines on the north side of the Horse Heaven Hills and substitute their power with the solar array.

Comment #5 – Proximity to population - The highest number of Wind Turbines in the lowest economic groups, which raise Environmental Equity Questions

Requirements:

Title VI of the Civil Rights Act prohibits recipients of Federal Financial Assistance from discrimination based on race, color, or national origin in any program or activity.

Executive Order 12898, directs Federal agencies to identify and address, as appropriate, disproportionally high adverse human health and environmental effects of their programs, policies, and activities on minority populations and low-income populations**.**

Description:

Demographics:

- Benton County has over 80,000 people within six (6) miles of the proposed Wind Turbines, more than all other Wind Farms in the state combined.
- Wind Turbines are closer to Benton City limits than any other community in the region.
- I-82 South Development at the Benton City exit will have Wind Turbine views of at least four (4) Wind Turbines, including flashing lights within a mile.
- Of all the municipalities and communities along the project length, Benton City is the smallest.
- Of all the municipalities and communities along the project length, Benton City has the lowest per capita income.
- Of all the municipalities and communities along the project length, Benton City has the largest percentage of Hispanic residents. Upward of 35% of the students in KIBE School District are not fluent in the English language.
- Of all the municipalities and communities along the project length, Benton City is most underprivileged and under-served.

Conclusion:

Benton City deserves to be treated fairly and should have the ability to negotiate an outcome that will enhance the City's investments and support a higher quality of life without endangering its citizens. The City of Benton City consists of a very small staff that do not have the ability to evaluate many of the impacts created by this project. The City does not want to have its goals and plan marginalized because of the effort needed to adequately review of the project.

Recommended Stipulations:

1. Remove and relocate Wind Turbines along the ridgeline back further south and implement options with more solar array.
2. Carefully identify, describe and evaluate economic damages that will be caused by this project to the City of Benton City.

Comment #6 – Clarification of number of bird fatalities over the lifecycle of the project.

Description:

The City is concerned that a clarification is required to enable the general population to understand the total number of fatalities that will occur to birds and bats because of this project.

The Application Appendices pertaining to Wildlife and the DEIS Appendix 4.6-1 2022 Wind Turbine Wildlife Collision Risk Assessment state "The literature review suggests that the effect of turbine height and rotor swept area on bird collision mortalities remains uncertain (AWWI 2021). Some studies did not find a relationship between bird mortality rates and turbine height (Everaert 2014; Barclay et al. 2007; Krijgsveld et al. 2009). Other studies report higher bird mortality rates at taller turbines on a per turbine basis (Loss et al. 2013; De Lucas et al. 2008, Thelander et al. 2003 but lower mortality rates per unit of energy generation (Thaxter et al, 2017), although this is not unequivocal (Huso et al. 2021)".

"Collision with turbines is considered one of the greatest threats to bats in North America (O'Shea et al.2016). Three species of migratory tree-roosting bats (i.e., eastern red bat, silver-haired bat and hoary bat) make up most bat mortalities resulting from turbine collision, raising concerns about population-level impacts as the number of wind farms increases (Barclay et al 2007; Zimmerling and Francis 2016; Hein and Schirmacher 2016).

However, there is limited and conflicting information about the effect of turbine height on bat collision mortalities. Some studies report that bat mortality rates increase with turbine size (Baerwald and Barclay 2009), including on a per megawatt (MW) basis (Barclay et al. 2007), while others report no effect (Huso et al 2021), the opposite effect (Fielder et al 2007), or that mortality rates increase on either side of an optimum intermediate turbine size (Thaxter et al 2017)."

"Bird and bat collision risk associated with the two general turbine options was evaluated based on site-specific information collected during baseline studies conducted for the Project and presented in the Application for Site Certification (ASC) to the Washington Energy Facility Site Evaluation Council in 2021, in combination with a review of published scientific literature pertaining to bird and bat interactions with Wind Turbines."

"The DEIS document addresses studies based on the exposure indices that represent relative collision risk but are not directly translatable to the number of bird mortalities due to factors such as species-specific collision avoidance."

This type of information (exposure index) is not helpful to public understanding of bird and bat mortality rates.

To find meaningful numbers, the Application of Site Certification (ASC) was searched and a document entitled Bird and Bat Conservation Strategy, Horse Heaven Wind Farm, Benton County, Washington was found as Appendix M to the ASC. Chapter 6.0 Assessment of Risks to Birds and Bats, calculates risks from direct impacts such as collisions with turbines, power line interactions and indirect impacts.

In Section 6.1.1.1 Collisions for All Birds was compiled from publicly available data from 482 studies across 221 wind energy facilities in the US that reported 336 bird species as fatalities (WEST 2019). Of the studies between 2015 and 2018, fatality estimates at these facilities ranged from zero to nine birds/MW/year. The historic maximum as 12.1 birds/MW/year in California in 2014 (WEST 2019).

American Wildlife Institute (AWWI) also compiled publicly available data from 193 studies across 130 wind energy facilities in the US that reported 281 species of birds as fatalities during survey and an additional 13 species as incidental observation (AWWI 2019). Of the studies between 2002 and 2017, fatality estimates at the facilities ranged from approximately zero to 12 birds/MW/year with a median value of 1.8 birds/MW/year.

Among facilities in the USFWS Pacific Region, fatality estimates ranged from less than 0.4 to 8.4 birds/MW/year (median of 2.4 birds/MW/year) based on the 22 wind facilities (30 technical reports; WEST 2019). Of the more than 500 Avian species occurring in the Pacific Region, 114 have been recorded as fatalities.

While this still is not readily apparent as to just how many birds are being discussed, it can be calculated.

For example:

1 bird fatality per year per MW times the number of years in the life cycle for a 1150 MW design of the HHH Wind Farm would yield:

1 bird x 1150 MW x 35 years = 40,250 birds

1.8 birds x 1150 MW x 35 years = 72,450 birds

2.8 birds x 1150 MW x 35 years = 112,700 birds

9 birds x 1150 MW x 35 years = 362,250 birds

12 birds x 1150 MW x35 years = 483,000 birds

Bats have not been studied as extensively in this respect. Appendix M states that AWWI (2018b) has compiled publicly available data from wind energy facilities in the US, and the median adjusted fatality estimate was 2.6 bats/MW/year with a range of 1 to 50 bats /MW/year. In Washington, fatality estimates from 13 facilities had a median adjusted fatality rate of 1.4 bats /MW/year at Nine Mile Canyon approximated the national median estimate and consisted entirely of hoary bats and silver-haired bats during the spring and fall (Erickson et al. 2003a, WEST 2019).

1 bat x 1150 MW x35 years = 40, 250 bats

2.6 bats x 1150 MW x 35 years = 104,650 bats

50 bats x 1150 x35 years = 2,012, 500 bats

A new study found that farmers around the world are turning to birds and bats for help reducing pesticide use, environmental impact, and increasing yields. By eating insects, bats save U.S. agriculture billions of dollars per year in pest control. Some studies have estimated that service to be worth over 3.7 billion dollars per year, and possibly as much as 53 billion dollars per year.

This value does not, however, consider the volume of insects eaten by bats in forest ecosystems and the degree to which that benefits industries like lumber. It also doesn't consider the critical importance of bats as plant and crop pollinators. So the actual monetary worth of bats is far greater than 3.7 billion dollars per year.

Conclusions:

The simplest way to keep birds and bats away from wind turbines is to not build wind turbines where lots of birds and bats are known to fly. It's not always that simple, though, since many of the open, treeless expanses that attract birds and bats are also prime locations for harvesting wind.

Wind turbines may pose less danger to raptors if they're sited away from cliffs and hills where the birds of prey seek updrafts.

Already-altered habitats like food farms make good turbine sites from a wildlife perspective, according to the American Bird Conservancy, but the main thing to avoid is any habitat deemed an "Important Bird Area."

These include places where birds congregate for feeding and breeding, like wetlands and ridge edges, as well as migratory bottlenecks and flight paths used by endangered or declining species.

Recommendations.

- Eliminate turbines in any habitat areas deemed to be an important bird or bat area.
- Lower the MW capacity with fewer Wind Turbines and find ways to mitigate these losses.
- Site Turbines away from ridgelines and other areas where birds and bats are known to fly.
- Consider ultrasonic deterrent devices, aka boom boxes which are inaudible to humans, but can be used to repel bats from wind turbines.
- Most wind turbines are painted white or gray, an attempt to make them as visually inconspicuous as possible. But white paint can indirectly lure birds and bats, researchers found in a 2010 study, by attracting the winged insects they hunt. White and gray turbines were second only to yellow ones in attracting insects, according to the study, including flies, moths, butterflies and beetles.

  Purple turned out to be the least attractive color to these insects, raising the possibility that painting wind turbines purple might alleviate some bird and bat fatalities. The researchers stopped short of advocating that, however, noting that other factors — such as heat given off by turbines — could also be encouraging wildlife to fly near the spinning blades.

Even if purple paint isn't practical, another line of research is investigating the use of ultraviolet light to deter birds and bats from turbines. While UV light is invisible to humans, many other species can see it — including bats, which aren't as blind as you might have heard. Still, given the limitations of long-distance vision at night, some researchers think migrating bats don't always see the spinning blades, and mistake the poles of wind turbines for trees. Rather than trying to deter bats at short range, a team of researchers with the U.S. Geological Survey and the University of Hawaii are studying how dim UV lights on turbines can warn bats about the danger from afar.

- Beyond new paint, lights, and sound, tweaking the design of wind turbines could greatly reduce the risk they pose to birds and bats. Engineers have come up with a wide array of wildlife-friendly designs in recent years, ranging from slight modifications to overhauls that barely resemble a traditional wind turbine. A concept known as Windstalk, for example, doesn't even use spinning blades. Developed by New York design firm Atelier DNA, it's meant to harness wind energy with giant, cattail-like poles that mimic "the wind sways a field of wheat, or reeds in a marsh." In Texas, some coastal wind farms have used radar for years to protect migrating birds. And there are products available like the MERLIN Avian Radar System, made by Florida-based DeTect, which scans the skies for 3 to 8 miles around wind-energy sites, both for "pre-construction mortality risk projections and for operational mitigation." Bats also typically prefer to fly in weak winds, so leaving turbines dormant at lower wind speeds — known as raising the "cut-in speed" at which they begin generating power — can save lives, too. In one study, published in the journal BioOne Complete, researchers found that leaving turbines idle until winds reach 5.5 meters per second curbed bat deaths by 60%.

Comment #7 - Reserve the right to provide additional comments due to the very short review period. These documents are so large that they require more time to be fully examined by the public.

Recommendations:

1. **Hold a public hearing at the end of the adjudication.**
2. **Hold a public comment period on the Final EIS.**