

**FINAL
ENVIRONMENTAL ASSESSMENT
FOR
BATTELLE MEMORIAL INSTITUTE'S
SMART GRID PROJECT
AT THE
CITY OF ELLENSBURG'S RENEWABLE ENERGY
PARK, KITTITAS COUNTY, WASHINGTON**

**U.S. Department of Energy
National Energy Technology Laboratory**



September 2010

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ACRONYMS AND ABBREVIATIONS

CFR	Code of Federal Regulations
DOE	U.S. Department of Energy (also referred to as the Department)
EA	environmental assessment
EPA	U.S. Environmental Protection Agency
kW	kilowatts
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act, as amended
NSR	new source review
PM ₁₀	particulate matter with median aerodynamic diameter of 10 micrometers or less
PM _{2.5}	particulate matter with median aerodynamic diameter of 2.5 micrometers or less
PSD	prevention of significant deterioration
Recovery Act	American Recovery and Reinvestment Act of 2009
SHPO	State Historic Preservation Officer

Note: Numbers in this EA generally have been rounded to two or three significant figures. Therefore, some total values might not equal the actual sums of the values.

COVER SHEET

Responsible Agency: U.S. Department of Energy (DOE)

Title: *Final Environmental Assessment for Battelle Memorial Institute's Smart Grid Project at the City of Ellensburg's Renewable Energy Park, Kittitas County, Washington* (DOE/EA-1756)

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Abstract: DOE prepared this EA to evaluate the potential environmental consequences of providing a financial assistance grant under the *American Recovery and Reinvestment Act of 2009* (Recovery Act) (Recovery Act; Public Law 111-5, 123 Stat. 115) to Battelle Memorial Institute to facilitate the installation of 540 additional solar panels, 10 solar concentrating modules, and 8 small wind energy systems at the City of Ellensburg's Renewable Energy Park located in Ellensburg, Kittitas County, Washington. This EA analyzes the potential environmental impacts of DOE's proposed action of providing the Recovery Act funding and of the No-Action Alternative.

In this EA, DOE evaluated impacts to air quality, noise, aesthetics and visual resources, soils and geology, water resources, biological resources, and cultural resources. After performing a screening analysis of other environmental resource areas, DOE concluded that impacts to some aspects of the environment would not be likely to occur or would be negligible. The proposed project would be designed in compliance with federal and state air quality regulations, would reduce greenhouse gas emissions, and would have a net beneficial impact on air quality in the region. Operation of the concentrating solar modules and eight small wind systems would cause a negligible increase in noise outdoors near the adjacent interstate and Recreation Park. The aesthetics of the City of Ellensburg's Renewable Energy Park would change with the addition of ten 18-foot diameter solar concentrating modules and eight wind towers ranging from 40 to 100 feet in height; however, these changes would be in compliance with the City and County proposed regulations for wind turbines. Adverse impacts to visual resources would be minimal.

There would be no adverse impacts to the 100-year floodplain profiles associated with Reecer Creek, and no increase in risk to lives or property in the area from the project. Developing 3 acres for further construction of the Renewable Energy Park would not adversely impact any plant or animal species because the project site is small and isolated from larger tracks of

undisturbed land, and because plant and animal species found there are common and widespread in the region. The risk of collisions between the wind turbines and migratory birds and bats is not likely due to the configuration of the turbines (parallel to bird movements toward the wetlands and grouped configuration), the relatively short height of the turbines, and placement in previously disturbed habitat. In support of this EA, a cultural resources inventory was conducted for the area of potential effect (project site). No archaeological resources were identified, and DOE determined that no historic properties would be affected by Battelle's project. In summary, expanding the Renewable Energy Park with additional solar panels, solar concentrating modules, and small wind turbines would not likely result in significant adverse environmental impacts, particularly considering the other existing surrounding uses.

Availability: DOE encourages public participation in the NEPA process. A Notice of Availability was placed in *Ellensburg Daily Record* on July 17, 19, and 20, 2010. The draft EA was made available for public review on DOE's National Energy Technology Laboratory web site and at the Ellensburg Public Library beginning July 16, 2010. This final EA is available on DOE's National Energy Technology Laboratory web site, <http://www.netl.doe.gov/publications/others/nepa/ea.html>, and DOE's NEPA web site at http://nepa.energy.gov/DOE_NEPA_documents.htm.

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SUMMARY

The U.S. Department of Energy (DOE) proposes to award a financial assistance grant under the *American Recovery and Reinvestment Act of 2009* in the form of a cooperative agreement to Battelle Memorial Institute (Battelle). This agreement would facilitate expansion of solar energy generation and add wind capacity at the Renewable Energy Park. DOE's proposed action is to award a \$600,000 financial assistance grant to Battelle to facilitate the expansion of solar generation and the addition of wind capacity at the City of Ellensburg's Renewable Energy Park located in Ellensburg, Washington. The estimated cost of the project is \$1.2 million. Battelle would purchase and install 540 solar panels, 10 solar concentrating modules, and 8 small wind turbines to make renewable energy generation accessible to the citizens of Ellensburg. Battelle's proposed project would add up to an additional 85 kilowatts of solar energy and 80 kilowatts of wind energy generating capacity. The proposed project would be built within the City of Ellensburg's Renewable Energy Park, which is on a previously disturbed agricultural field located directly east of Interstate 90. The park is currently undergoing development and contains 192 polycrystalline solar panels and 180 thin-film solar panels.

In compliance with the *National Environmental Policy Act* (42 U.S.C. Section 4321 et seq.) and DOE's *National Environmental Policy Act* implementing regulations (10 CFR Part 1021) and procedures, this EA examines the potential environmental impacts of DOE's proposed action, Battelle's proposed project, and the No-Action Alternative. Its purpose is to inform DOE and the public of the potential environmental consequences of the proposed project and the alternatives.

In this environmental assessment, DOE analyzed impacts to air quality, noise, aesthetics and visual resources, geology and soils, water resources, biological resources, and cultural resources. Installation and operation of the proposed solar panels, solar concentrating modules, small wind energy systems, and other equipment would not have any meaningful or detectable impacts on land use, socioeconomics, environmental justice, occupational health and safety, transportation and traffic, utilities, materials, and waste generation.

The new solar and small wind energy systems would not generate criteria pollutants or carbon dioxide. The proposed project would be in Kittitas County, Washington, which is an attainment area for all criteria pollutants. As such, the proposed project would meet the conformity requirements of the *Clean Air Act*. The proposed project would produce a quantity of electricity via solar and wind energy, thereby reducing the amount of pollutants produced from burning fossil fuels via conventional electricity generation. The proposed project would contribute to reducing regional greenhouse gas emissions.

The solar concentrating modules would generate the noticeable noise at the Renewable Energy Park. A person standing at the perimeter fence around the solar concentrating modules, assumed to be 50 feet from the modules, would experience a sound level of approximately 66 dBA. The wind turbines would not increase the perceptible noise from the site since they are much quieter

than the solar concentrating modules. However, the solar concentrating modules and wind turbines would not be heard at the nearest residences, about 0.5 mile away. In addition, the proposed project is adjacent to Interstate 90; therefore, traffic noise would remain the dominant noise in the area. Operation of the concentrating solar units would be in compliance with all City ordinances including the noise ordinance.

The aesthetics of the area would change with the addition of ten 18-foot-diameter solar concentrating modules and eight wind towers 40 to 100 feet in height at the Renewable Energy Park. The visual impact of a wind turbine depends, to some extent, on the sensitivity of the viewer. Some individuals consider the aerodynamic design of the turbines graceful and modernistic, while others feel they are an unnatural intrusion to the natural scenery and viewshed. With the proximity of large, commercial-scale wind farms in the region and the small wind systems used by individuals near Ellensburg, potential viewers might be familiar with and more accepting of wind systems and, therefore, less sensitive to their visual impacts. In addition, the expansion of the Renewable Energy Park is consistent with the City of Ellensburg's approach of encouraging utility customers to install renewable energy systems such as solar photovoltaic panels and small wind turbines. The proposed small wind systems would be in compliance with the City and County proposed regulations for wind turbines. Adverse impacts to visual resources would be minimal.

DOE concluded that developing three additional acres for further construction of the City of Ellensburg's Renewable Energy Park would not significantly impact any plant or animal species because the project site is small and isolated from larger tracts of undisturbed land, and because plant and animal species found there are common and widespread in the region. The proposed project would have no effect on species protected under the federal *Endangered Species Act*, and no State-protected species are expected to be found on the site. Risk of collisions with the wind turbines by migratory birds and bats would be minimal due to the configuration of the turbines (parallel to bird movements toward the wetlands and grouped configuration), relatively short height of the turbines, and placement in previously disturbed habitat. To reduce the potential for nesting and perching of migratory birds, Battelle would assure that the City of Ellensburg follows the guidelines set forth by the U.S. Fish and Wildlife Service; that is, external ladders and platforms would not be used on tubular towers, and any guy wires would be flagged to serve as a deterrent to birds. Limiting the use of lattice-type towers could also reduce the potential for bird nesting and perching. DOE has completed consultation with the U.S. Fish and Wildlife Service; the U.S. Fish and Wildlife Service concurs with DOE's conclusion of no effect regarding species protected under the federal *Endangered Species Act* and with DOE's assessment of the project's low risk to migratory birds.

Impacts to cultural resources are not expected. There are no sites listed on the National Register of Historic Places within 0.5 mile of the project site (DAHP 2009). DOE conducted consultation with the Washington State Historic Preservation Officer. The City of Ellensburg retained Central Washington Anthropological Survey of Central Washington University to conduct a cultural resources inventory for the area of potential effect (project site). The archaeological

survey did not identify archaeological resources, and based on the conclusions of the cultural resources inventory, DOE determined that no historic properties would be affected by Battelle's project. The Washington State Historic Preservation Officer concurred with DOE's determination of no potential effect. No American Indian concerns regarding the proposed project have been identified.

Relative to the cumulative changes in the environment that would be caused by the proposed project in combination with other planned activities nearby, the installation and operation of the solar and small wind energy systems at the City of Ellensburg's Renewable Energy Park would cause small, adverse incremental changes to aesthetics and visual resources. The proposed project would result in a beneficial incremental impact to the region's air quality by reducing carbon dioxide emissions.

Under the No-Action Alternative, DOE would not provide funding to Battelle and the new solar and small wind energy systems would not be installed or operated. No impacts to the existing environment would occur, and the beneficial impacts discussed above would not be realized.

1. INTRODUCTION

As part of the *American Recovery and Reinvestment Act of 2009* (the Recovery Act; Public Law 111-5, 123 Stat. 115), the U.S. Department of Energy's (DOE or the Department) National Energy Technology Laboratory, on behalf of DOE Office of Electricity Delivery and Energy Reliability, is providing up to \$435 million in competitively awarded funding for the deployment of Smart Grid Demonstrations. Smart grid projects include regionally unique demonstrations to verify smart grid technology viability, quantify smart grid costs, validate new smart grid business models at a scale that can be readily adapted that can be replicated around the country, and to develop new and innovative forms of energy storage. The funding of these projects requires compliance with the *National Environmental Policy Act of 1969*, as amended (NEPA; 42 U.S.C. 4321 et seq.), Council on Environmental Quality regulations (40 CFR Parts 1500 to 1508), and DOE NEPA implementing procedures (10 CFR Part 1021).

Battelle Memorial Institute (Battelle) proposes to expand the installed capacity of solar energy and install eight small wind energy systems of 2.5 to 30 kilowatts (kW) in size, with associated underground wiring and communication lines, at the City of Ellensburg's existing Renewable Energy Park located in Ellensburg, Kittitas County, Washington. The project would result in up to an additional 85 kW of solar-generating capacity and up to 80 kW of small wind-generating capacity. By using different technologies in each wind system, the project would provide information to evaluate each turbine's performance capabilities. DOE is considering providing Battelle with financial assistance under Funding Opportunity Announcement DE-FOA-0000036, *Recovery Act: Smart Grid Demonstrations*, to facilitate installation of the small wind and solar energy generating systems. Battelle would use DOE funding to facilitate the purchase and installation of 540 thin-film nanotechnology solar panels, 10 concentrating solar systems, and 8 small wind energy systems.

DOE prepared this environmental assessment (EA) to evaluate the potential environmental consequences of providing funding under DOE's program. In compliance with NEPA and its implementing procedures, this EA examines the potential environmental consequences of DOE's proposed action (that is, providing funding), Battelle's proposed project, and the No-Action Alternative (under which it is assumed that, as a consequence of DOE's denial of financial assistance, Battelle would not proceed with the project). The EA's purpose is to inform DOE, resource agencies, and the public of the potential environmental consequences of the proposed project and alternatives.

This chapter explains NEPA and related procedures (Section 1.1), the background of this project (Section 1.2), the purpose and need for DOE action (Section 1.3), and the environmental resource areas DOE did not carry forward to detailed analysis (Section 1.4). Chapter 2 discusses DOE's proposed action, Battelle's proposed project, the No-Action Alternative, and action alternatives. Chapter 3 details the affected environment and potential environmental consequences of the proposed action, proposed project, and No-Action Alternative. Chapter 4 addresses cumulative impacts, and Chapter 5 provides DOE's conclusions from the analysis.

Chapter 6 lists the references for this document. Appendix A contains the distribution list for this document, and Appendix B contains copies of DOE's consultation letters with other agencies.

1.1 National Environmental Policy Act and Related Procedures

In accordance with DOE NEPA implementing procedures, DOE must evaluate the potential environmental impacts of its proposed action that could have a significant impact on human health and the environment, including decisions on whether to provide financial assistance to states and private entities. In compliance with these regulations and DOE's procedures, this EA:

- Examines the potential environmental impacts of the proposed action and the No-Action Alternative;
- Identifies unavoidable adverse environmental impacts of the proposed action;
- Describes the relationship between local short-term uses of the environment and the maintenance and enhancement of long-term productivity; and
- Characterizes any irreversible and irretrievable commitments of resources that would be involved should DOE decide to implement its proposed action.

DOE must meet these requirements before it can make a final decision to proceed with any proposed federal action that could cause adverse impacts to human health or the environment. This EA fulfills DOE's obligations under NEPA and provides DOE with the information needed to make an informed decision about helping finance the purchase and installation of solar panels, solar concentrating systems, and small wind energy systems at the City of Ellensburg's Renewable Energy Park located in Ellensburg, Kittitas County, Washington.

This EA evaluates the potential individual and cumulative impacts of the proposed project. No other action alternatives are analyzed. For purposes of comparison, this EA also evaluates the impacts that could occur if DOE did not provide funding (the No-Action Alternative), under which DOE assumes that Battelle would not proceed with the project. This assumption may be incorrect—that is, Battelle might proceed without federal assistance. However, this assumption allows DOE to compare the impacts of an alternative in which the project occurs with one in which it does not.

1.2 Background

DOE's National Energy Technology Laboratory and the Office of Electricity Delivery and Energy Reliability manage the research and development portfolio of the Smart Grid Demonstrations Program. Their mission is to lead national efforts to modernize the electrical grid; enhance the security and reliability of the energy infrastructure; and improve the recovery from disruptions to electricity supply. The Smart Grid Demonstrations Program will help verify

the technological and business viability of new technologies and show how fully integrated smart grid systems can be readily adapted and copied around the country. Further, implementation of smart grid technologies could reduce electricity use by more than 4 percent by 2030 (DOE 2009). It is estimated that smart grid technologies can save U.S. businesses and consumers about \$20.4 billion in electricity costs (DOE 2009).

Congress appropriated funding for the Smart Grid Demonstration Program in the Recovery Act to stimulate the economy and reduce unemployment in addition to furthering the existing objectives of the program. DOE solicited applications for this funding by issuing a competitive Funding Opportunity Announcement (DE-FOA-0000036), *Recovery Act: Smart Grid Demonstrations*, on June 25, 2009. The announcement invited applications in two areas of interest:

- Area of Interest 1. Smart Grid: Regionally unique demonstration projects to quantify smart grid costs, benefits, and cost-effectiveness; verify smart grid technology viability; and validate new smart grid business models, all at a scale that can be readily adapted and replicated around the country. Smart grid technologies of interest include advanced digital technologies for use in planning and operation of the electric power system and the electricity markets such as microprocessor-based measurement and control, communications, computing, and information.
- Area of Interest 2. Energy Storage: Demonstration projects for major, utility-scale, energy storage installations to help establish costs and benefits; verify technical performance; and validate system reliability and durability, all at scales that can be readily adapted and replicated across the United States. Energy storage systems include advanced battery systems (including flow batteries), ultracapacitors, flywheels, and compressed air energy systems. Application areas include wind and photovoltaic integration with the grid, upgrade deferral of transmission and distribution assets, congestion relief, and system regulation.

DOE prepared an environmental synopsis to evaluate and provide a comparison of potential environmental impacts for each proposal deemed to be within the competitive range. DOE used the synopsis to evaluate appreciable differences in the potential environmental impacts from those proposals. The synopsis included: (1) a brief description of background information related to the Smart Grid Demonstration area of interest, (2) a general description of the proposals received in response to the Funding Opportunity Announcement and deemed to be within the competitive range, (3) a summary of the assessment approach used in the initial environmental review to evaluate the potential environmental impacts associated with the proposals, and (4) a summary of the environmental impacts, focusing on potential differences among the proposals. The environmental synopsis related to the Battelle proposed project is provided in Appendix C of this EA.

On November 24, 2009, DOE announced its selections of 16 projects in Area of Interest 1 and 16 projects in Area of Interest 2 based on the evaluation criteria in the funding opportunity announcement and giving special consideration to projects that promoted the objectives of the Recovery Act—job preservation or creation and economic recovery—in an expeditious manner.

Battelle's proposed project, expansion of solar capacity and installation of small wind energy systems at Ellensburg's Renewable Energy Park in Washington, was one of the 16 projects DOE selected for funding under Area of Interest 1. DOE's proposed action is to provide \$600,000 in financial assistance under a cost-sharing arrangement with Battelle. The total cost of the project is estimated at \$1.2 million.

1.3 Purpose and Need

In June 2009, the Department initiated a process to identify suitable projects to lead the way for deploying integrated smart grid systems by issuing Funding Opportunity Announcement DE-FOA-0000036, *Recovery Act: Smart Grid Demonstrations*. This funding opportunity announcement was funded under the Recovery Act.

The purpose of the proposed action is to support the objectives of the Smart Grid Demonstration Program—to demonstrate advanced smart grid technologies and integrated systems that will help build a smarter, more efficient, more resilient electrical grid—and the goals of the Recovery Act. The Program will help verify smart grid technology viability, quantify smart grid costs and benefits, and validate new smart grid business models at a scale that can be readily adapted and replicated around the country. DOE considers the City of Ellensburg's Renewable Energy Park sub-project of Battelle's to be a project that can meet these objectives because it would: 1) increase power quality and reliability of the localized area, 2) reduce damages as a result of carbon emissions, 3) increase energy security through reduced oil consumption, and 4) further national knowledge and technology of new renewable energy generating systems.

The Recovery Act enacted legislation to create jobs, restore economic growth, and strengthen America's middle class through measures that modernize the nation's infrastructure, enhance America's energy independence, expand educational opportunities, preserve and improve affordable health care, provide tax relief, and protect those in greatest need. The Recovery Act has now enabled DOE to provide funds under this funding opportunity announcement that would partially satisfy the needs identified under the Act.

There has been chronic underinvestment and parochialism in getting energy where it needs to go through transmission and distribution, further limiting grid efficiency and reliability. While hundreds of thousands of high-voltage transmission lines course throughout the United States, only 668 additional miles of interstate transmission have been built since 2000 (DOE n.d.). As a result, system constraints worsen at a time when outages and power quality issues are estimated to cost American business more than \$100 billion on average each year (DOE n.d.). DOE's

action of providing this project with funding would help initiate modernization of a small portion of the nation's electrical grid system.

1.4 Environmental Resources Not Carried Forward

Chapter 3 of this EA examines the potential environmental consequences of the proposed project and the No-Action Alternative for the following resource areas:

- Air quality
- Noise
- Aesthetics and visual resources
- Geology and soils
- Water resources
- Biological resources
- Cultural resources

DOE EAs commonly address the following resource and subject areas. In an effort to streamline the NEPA process and enable a timely award to the selected project, this assessment did not examine these areas at the same level of detail as the resource areas listed above. The focus for the more detailed analysis was on those activities or actions that would require new or revised permits, have the potential for adverse environmental impacts, or have the potential for public controversy. For the reasons discussed below, DOE concludes that Battelle's proposed project would result in no impacts or very minor impacts to the following resource areas, and the detailed description and analyses of these resource areas are not carried forward into Chapter 3.

- Land use. There would be no change in land use. Expansion of solar systems and the addition of small wind energy systems are consistent with current land use as a renewable energy park.
- Socioeconomics. The project would not change socioeconomic factors such as employment, housing, or income. The project would not place a demand on City of Ellensburg services such as police and fire departments, hospitals, or schools. A small beneficial increase in employment, both temporary during construction and long-term during operation and maintenance of the expanded Renewable Energy Park, could be realized.
- Environmental justice. Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*, directs federal agencies to address environmental and human health conditions in minority and low-income communities. The evaluation of impacts to environmental justice is dependent on demonstrating that significant, adverse impacts from the proposed project are not disproportionately borne by any low-income or minority groups in the affected community. As illustrated in this EA, no adverse impacts would occur to any members

of the nearby community; therefore, DOE feels there would be no adverse and disproportional impacts to minority or low-income populations.

- Occupational health and safety. There would be no unique risks to occupational health and safety during installation and operation of the solar and small wind energy systems. Occupational health and safety requirements would be similar to those for other small construction and renewable energy projects. The City of Ellensburg would revise its occupational health and safety plan to address general safety issues for employees working with the solar-concentrating and small wind energy systems and to control public access.
- Utilities and materials. Production of up to 165 kW of electricity by the newly installed solar and small wind energy systems would result in a small reduction in the use of electricity and natural gas relative to the amounts consumed in the Ellensburg area. There are no unique materials required to manufacture, install, or operate the solar or small wind energy systems.
- Transportation. Addition of the new solar and small wind energy systems to the City of Ellensburg's Renewable Energy Park would not disrupt or impact current transportation patterns and systems.
- Waste generation. Addition of the new solar and small wind energy systems to the City of Ellensburg's Renewable Energy Park would not generate hazardous or nonhazardous waste beyond small temporary amounts of construction debris.

1.5 Consultations and Public Comment-Response Process

1.5.1 CONSULTATIONS

DOE consulted with the Confederated Tribes of the Colville Reservation, Confederated Tribes and Bands of the Yakama Indian Nation, and the Washington State Historic Preservation Officer (SHPO) to comply with the review requirements of Section 106 of the *National Historic Preservation Act*, as amended (16 U.S.C. 470 et seq.). DOE also communicated with the U.S. Fish and Wildlife Service (USFWS) to meet the requirements in the *Endangered Species Act of 1973*, as amended (16 U.S.C. 1531 et seq.). Copies of DOE's consultation correspondence are in Appendix B.

Tribes

On April 28, 2010, DOE sent a letter to the Confederated Tribes of the Colville Reservation, and Confederated Tribes and Bands of the Yakama Indian Nation requesting information on properties of traditional religious and cultural significance within the vicinity of the proposed project. DOE also requested any comments or concerns the tribe might have on the potential for

the proposed project to affect the properties. This information was requested to aid in the preparation of this EA and to meet the Department's obligations under Section 106 of the *National Historic Preservation Act* to take into account the effects of undertakings by federal agencies on historic properties and cultural resources. DOE did not receive a response from either tribe.

On July 15, 2010, DOE sent another letter to the Confederated Tribes of the Colville Reservation and Confederated Tribes and Bands of the Yakama Indian Nation to transmit the cultural resources inventory conducted by Central Washington Anthropological Survey of Central Washington University. The inventory included a review of archival records for the project site and pertinent historical and environmental literature to establish a context for potential archaeological resources and an archaeological survey across the area. In its letter, DOE requested a review of the inventory to address any comments or questions the Tribes might have. DOE did not received a response from either tribe. Copies of DOE's letters are provided in Appendix B of this EA.

Washington SHPO

DOE sent a letter to the Washington SHPO, Department of Archeology and Historic Preservation on April 28, 2010, requesting information on historic properties within and near the proposed site at the Ellensburg Renewable Energy Park. The State Archaeologist responded in a letter dated May 3, 2010, with its recommendation that a professional archaeological survey be conducted for any areas proposed for ground disturbance. DOE submitted the archaeological survey to the SHPO on July 15, 2010. Based on the conclusions of the cultural resources inventory, DOE determined that no historic properties would be affected by Battelle's project and requested concurrence from the Washington SHPO. The State Archaeologist concurred with DOE's determination in a letter dated July 20, 2010. Copies of these letters are provided in Appendix B of this EA.

U.S. Fish and Wildlife Services

On May 3, 2010, DOE sent a letter to the USFWS stating that it had obtained a list of federally listed threatened, endangered, proposed, and candidate species to determine if any federally listed species occur in the vicinity of the project location. DOE accessed the USFWS State of Washington website (<http://www.fws.gov/wafwo/>). Per the directions on the website, DOE provided the species list in its letter to USFWS to document DOE's compliance with 50 CFR 402.12 (c). The list was downloaded on April 12, 2010.

On June 1, 2010, USFWS responded with its acknowledgement of DOE's "no effect" determination and had no comments regarding the provided species list. The USFWS did suggest that DOE refer to the USFWS voluntary Interim Guidance on Avoiding and Minimizing Impacts from Wind Turbines during DOE's evaluation of proposed environmental impacts in the proposed project area; specifically, those related to migratory birds.

In further correspondence between representatives of DOE and USFWS, it was determined that the proposed project at the Ellensburg Renewable Energy Park has a relatively low risk to migratory birds, and further, the USFWS has no objection to the proposed project. Copies of all mentioned correspondence between DOE and USFWS are provided in Appendix B of this EA.

1.5.2 COMMENT-RESPONSE PROCESS

DOE issued the draft EA on July 17, 2010, and advertised its release in the *Ellensburg Daily Record* on July 17, 19, and 20, 2010. In addition, the Department sent copies for public review to the Ellensburg Public Library. DOE established a 21-day public comment period that began July 17, 2010 and ended August 6, 2010. The Department announced it would accept comments by mail, email, and fax. The draft EA was also sent to the applicable federal, state, and local agencies. DOE received no public comments on the draft EA.

2. DOE PROPOSED ACTION AND ALTERNATIVES

This chapter describes DOE's proposed action (Section 2.1), Battelle's proposed project (Section 2.2), the bases for not considering other alternatives (Section 2.3), and the No-Action Alternative (Section 2.4).

2.1 DOE's Proposed Action

DOE's proposed action is to award \$600,000 of financial assistance in the form of a cooperative agreement to Battelle through the Recovery Act to facilitate Battelle's project located in Ellensburg, Washington. The total cost of the project is estimated to be \$1.2 million.

2.2 Battelle's Proposed Project

Battelle's proposed project would expand the installed capacity of solar energy generation and add wind generation capabilities to the City of Ellensburg's existing Renewable Energy Park located in Ellensburg, Washington. The proposed project would provide valuable information on different solar- and wind-energy generation technologies. Construction of this project would include installation of up to 85 kW of solar panels and solar concentrating systems and up to 80 kW of small wind-energy turbine systems (eight towers 40 to 100 feet in height) in a 3-acre area, with associated underground wiring and communication lines. The individual components to be installed for this project are comparable in size to what could be installed for an individual dwelling or small commercial business. The proposed project site is within the City of Ellensburg's existing Renewable Energy Park, which is on a previously disturbed agricultural field located directly east of Interstate 90 (I-90). The City of Ellensburg's Renewable Energy Park is located within the 72-acre Rotary Park, which is used for recreation and sports. Figure 2-1 shows the location of the proposed project. To the south of the project site is an area designated for light industrial use and to the east is a recreational ball-field complex (2 baseball, 2 softball, 4 Little League, and 4 soccer). Figure 2-2 is an aerial photo showing the proposed project site and adjacent areas.

2.2.1 PROJECT BACKGROUND

Solar panels were first installed at the City of Ellensburg's Renewable Energy Park in November 2006, with additional panels added in 2008 and 2009. Currently, the park has 192 polycrystalline solar panels and 180 thin-film solar panels. The solar panels are arranged in eight rows of polycrystalline panels and two rows of thin-film panels. The nameplate capacity of the solar panels is about 70.5 kW (Titus 2010a). Nameplate capacity refers to the normal maximum output of a generating source. All of the power produced at this energy park connects to and supplements the City's utility power lines.

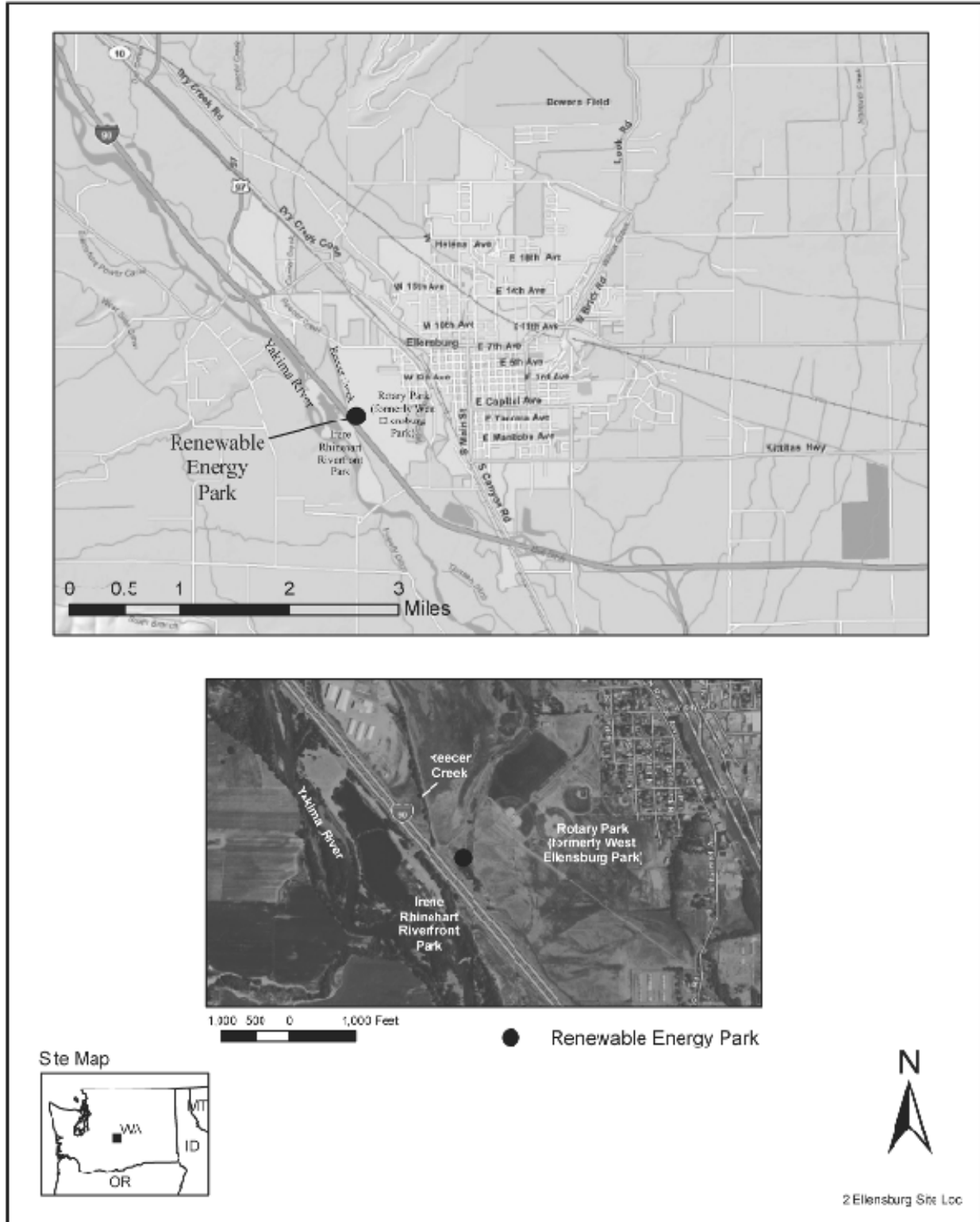


Figure 2-1. Proposed project location.

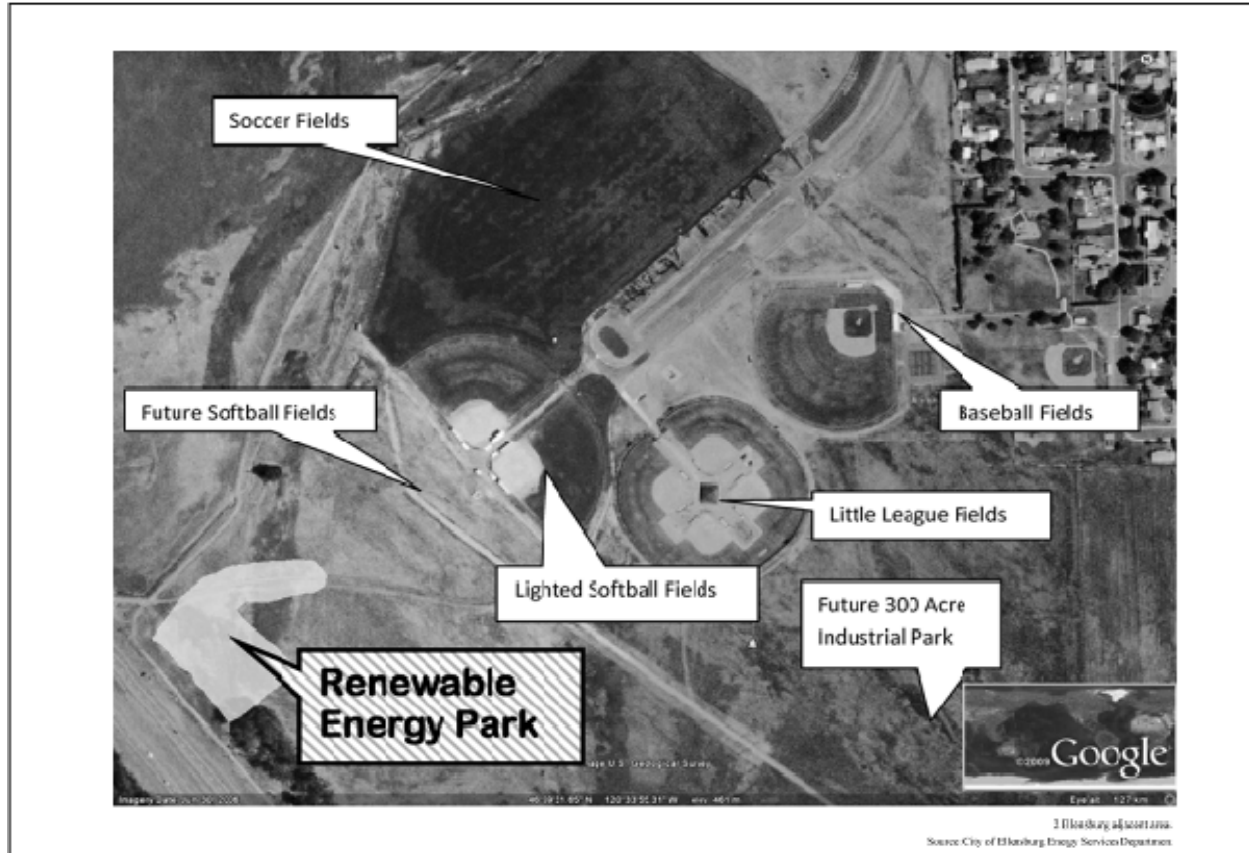


Figure 2-2. Proposed project site and adjacent areas.

The intent of Ellensburg’s Renewable Energy Park is to allow utility power users to contribute to the cost of installing the renewable distributed generation while the utility pays for all other costs, resulting in approximately a 50-50 cost share with the customer. By encouraging contribution toward a community facility, customers can participate at a lower cost and avoid site-related issues that might exist at their homes and businesses that would make the installation of these power generation devices not feasible at their properties. Customers also gain a greater return on their investment, as the City gives contributors a dollar credit on their utility bill for the value of the electricity produced by the renewable system. The utility gains greater control of the renewable energy systems by centrally locating them with a single tie to the utility grid. In addition, using this location provides an opportunity for the nearby Central Washington University and the local school district to research comparative performance from a variety of renewable energy equipment manufacturers. Through cooperative agreements, the City shares monitoring data for the solar panels with these educational institutions to support continuing research of renewable energy systems. This type of cooperative agreement is expected to continue with the expansion of the Renewable Energy Park.

2.2.2 PROPOSED MODIFICATION

The proposed project would allow the City of Ellensburg to continue to expand the existing Renewable Energy Park with state-of-the-art solar and wind systems and would provide a communications infrastructure to acquire and transmit project data.

The expanded solar project would utilize two solar technologies:

- Thin film design
- Concentrating/solar-focusing devices

Plans include the addition of six more rows (540 panels) of thin-film nanotechnology solar panels, which would increase the total photovoltaic panel output to 108 kW (Titus 2010a). In addition, 10 concentrating solar modules would be installed, providing 30 kW of energy.

A concentrating solar module is composed of a parabolic dish, similar to a satellite dish, that uses lenses or mirrors to direct and concentrate sunlight onto a thermal receiver, which in turn absorbs and collects the heat and transfers it to the engine generator. The concentrated solar modules proposed for the City of Ellensburg's Renewable Energy Park would resemble a satellite dish. These parabolic dishes are approximately 18 feet in diameter, and would be erected about 2 feet above the ground. Figure 2-3 illustrates the proposed site layout for the additional solar panels and concentrating solar modules.

Battelle proposes to also install eight small wind energy systems capable of generating 2.5 to 30 kW each, that can ultimately generate a total of 80 kW of wind capacity (site is expandable to about 100 kW). The individual wind systems would be installed on concrete pads, constructed to suppliers' recommendations. Foundations capable of supporting these wind generating towers will likely vary from 5 to 10 feet in depth. There is an existing unpaved aggregate access road directly to the project site as well as a paved walking trail along which the small wind systems would be located (Figure 2-3). The towers would range in height from 40 to 100 feet. Four small wind systems (2 to 3 kW) on shorter towers would be placed on the south side of the walking trail. Four larger small wind systems (10 to 30 kW) on taller towers would be placed on the north side (Figure 2-3).

Different wind technologies or turbines would be used in each wind system, with one system using a traditional propeller-type unit and the seven others using turbines that could range from metal-bladed vertical shaft to fiberglass freeform horizontal or vertical designs. By metering each of the turbines separately, the City of Ellensburg would be able to evaluate each turbine's performance.

Communications and supervisory control and data acquisition equipment; instruments to measure wind speed, ambient temperature, panel temperature; insolation; and associated underground low-voltage wiring would be installed at the site.

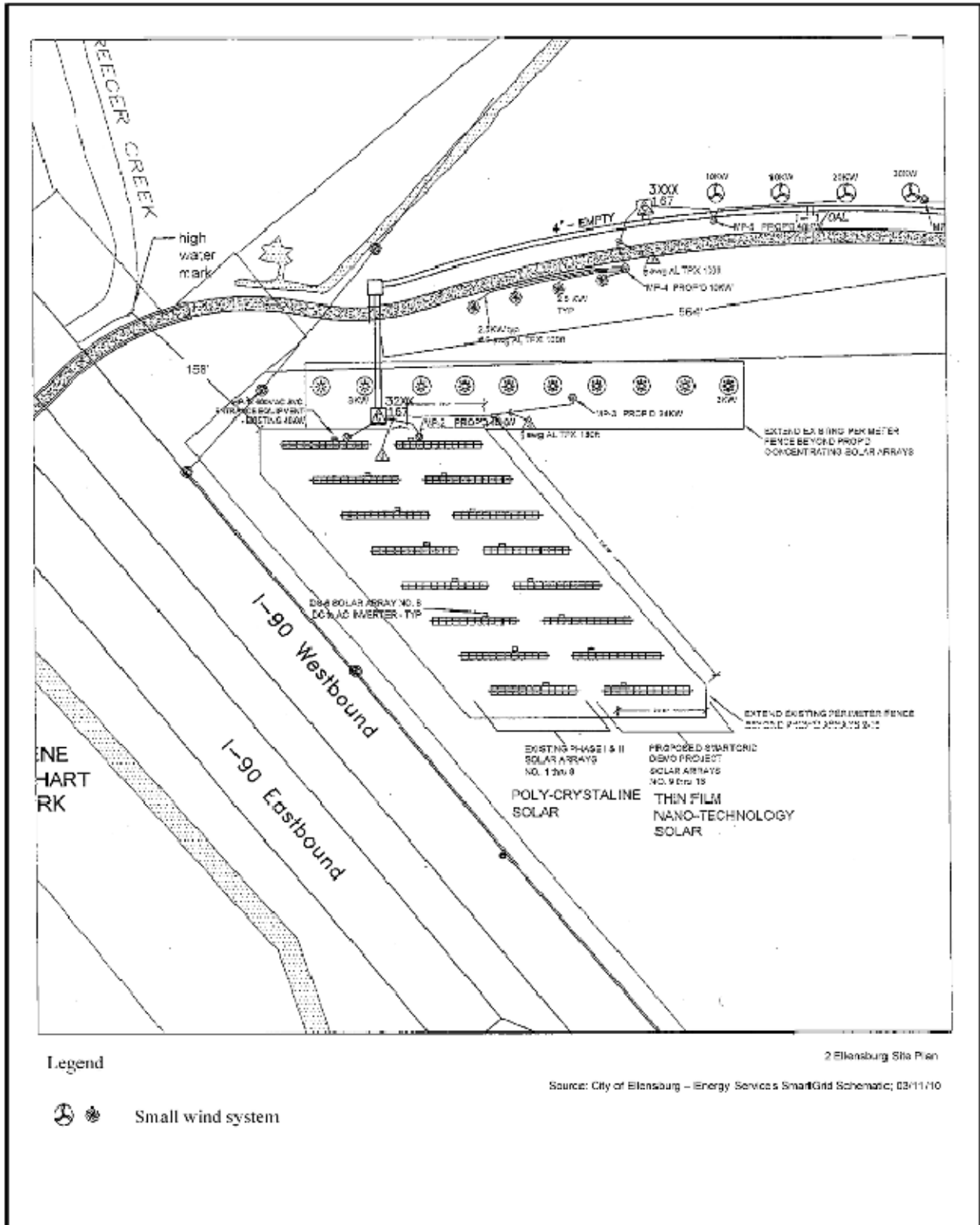


Figure 2-3. Proposed site plan.

Benefits of the proposed project include:

- Increases the country's energy independence while reducing greenhouse gas emissions.
- Offers customers who are interested in small renewable energy an alternative to installing equipment in their home or business. By encouraging customers to contribute toward a community facility, customers could participate at a lower cost (minimum investment of \$250) and avoid site-related issues that might exist at their home or business. Customers also gain a greater return on their investment, as the City gives contributors a dollar credit on their utility bill for the value of the electricity produced by the renewable system.
- Allows the utility greater control of renewable energy systems by locating them in a central location.
- Provides an opportunity for Central Washington University and the local school district to research comparative performance from a variety of renewable types and manufactures. Real-world comparative data do not exist for competing technologies. With the help of the University, Ellensburg will be able to detail hourly, monthly and annual capacity factors as well as energy production. The data will be correlated with insolation and wind-speed data. Insolation is a measure of solar radiation energy received on a given surface area in a given time.
- Provides for evaluation of benefits and costs by the City of Ellensburg associated with future control strategies for management of responsive loads, distribution automation, and reduced cost to consumers.
- Generates up to 165 kW of clean energy from renewable (solar and wind) resources.

2.3 Alternatives

DOE's alternatives to its proposed action for the Smart Grid Program consist of the other technically acceptable applications received in response to the Funding Opportunity Announcement DE-FOA-0000036, *Recovery Act: Smart Grid Demonstrations*. Prior to selection, DOE made preliminary determinations regarding the level of review required by NEPA. A portion of DOE's technical reviews was based on potentially significant impacts that could be identified. The projects' significant impacts were considered within the context and intensity of possible impacts. DOE conducted these preliminary environmental reviews pursuant to 10 CFR 1021.216 and prepared environmental critiques and synopses for projects under the Funding Opportunity Announcement. These preliminary NEPA determinations and environmental reviews were provided to the selecting official, who considered them during the selection process. Appendix C of this EA contains DOE's environmental synopsis related to Battelle's proposed project.

Because DOE's proposed action under the Smart Grid Program is limited to providing financial assistance in cost-sharing arrangements to projects submitted by applicants in response to a competitive funding opportunity, DOE's decision is limited to either accepting or rejecting the project as proposed by the proponent, including its proposed technology and selected sites. DOE's consideration of reasonable alternatives is therefore limited to the technically acceptable applications and a No-Action Alternative for each selected project.

2.4 No-Action Alternative

Under the No-Action Alternative, DOE would not provide funding to Battelle for the proposed project. As a result, installation of the solar and small wind energy systems would be delayed while Battelle looked for other funding sources, or abandoned if other funding sources could not be secured. Furthermore, modernizing the electric grid, enhancing security and reliability of the energy infrastructure, and facilitating recovery from disruptions to energy supply would not occur or would be delayed, and DOE's ability to achieve its objectives under the Smart Grid Program and the Recovery Act would be impaired.

Although Battelle's proposed project might proceed if DOE decided not to provide financial assistance, DOE assumes, for purposes of this EA, that the project would not proceed without this federal funding. If the project did proceed without DOE's financial assistance, the potential impacts would be essentially identical to those under DOE's proposed action (that is, providing assistance that allows the project to proceed). In order to allow a comparison between the potential impacts of a project as implemented and the impacts of not proceeding with a project, DOE assumes that if it decided to withhold financial assistance from this project, construction and operation of Battelle's proposed Ellensburg project would not proceed.

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

In this chapter, DOE assesses the following resources: air quality, noise, aesthetics and visual resources, geology and soils, water resources, biological resources, and cultural resources. The “environmental baseline” for each of these resource areas is described first, followed by an assessment of the potential consequences of the proposed project and of the No-Action Alternative.

3.1 Air Quality

3.1.1 AFFECTED ENVIRONMENT

This section describes the existing air quality conditions at and surrounding the project site. Climate and ambient air quality conditions are discussed followed by a discussion of air quality conformity and greenhouse gas emissions.

3.1.1.1 Climate and Ambient Air Quality Conditions

The proposed project is located in a semi-arid region of south-central Washington that includes the Ellensburg Valley, the central plains area in the Columbia Basin. This is the lowest and driest section in eastern Washington. The area experiences about 200 days of sunshine per year (OWSC 2010). Annual precipitation ranges from 7 inches in the drier localities along the southern slopes of the Saddle Mountains to 15 inches near the Blue Mountains.

The proposed project location has a strong wind energy resource, which is primarily thermal driven. Studies show that when warm air rises over the desert-like areas east of Ellensburg, cooler air in the Cascade Mountain Range, west of Cle Elum near Snoqualmie Pass in western Kittitas County, is drawn through the Kittitas Valley. A wind rose for the Kittitas Valley, about 12 miles north of Ellensburg, indicates the highest wind speeds are from the west and west-northwest direction (Figure 3-1) and generally occur in the spring through summer months (EFSEC 2007). Figure 3-2 indicates that the site is located in an area having wind speeds between 12.5 and 13.4 miles per hour at 33 feet in height, which is classified as Wind Power Class 4 or “good” for small wind turbine productivity estimates. Areas designated Wind Power Class 3 or greater are suitable for most utility-scale wind turbine applications.

Ambient air quality can be characterized in terms of whether it complies with the primary and secondary National Ambient Air Quality Standards (NAAQS). The *Clean Air Act* (42 U.S.C. 7401 et seq.) requires the U.S. Environmental Protection Agency (EPA) to set NAAQS for pollutants considered harmful to public health and the environment. National primary ambient air quality standards define levels of air quality that the EPA has determined necessary to provide an adequate margin of safety to protect public health, including the health of “sensitive” populations such as children and the elderly. National secondary ambient air quality standards define levels of air quality that are deemed necessary to protect the public welfare, including

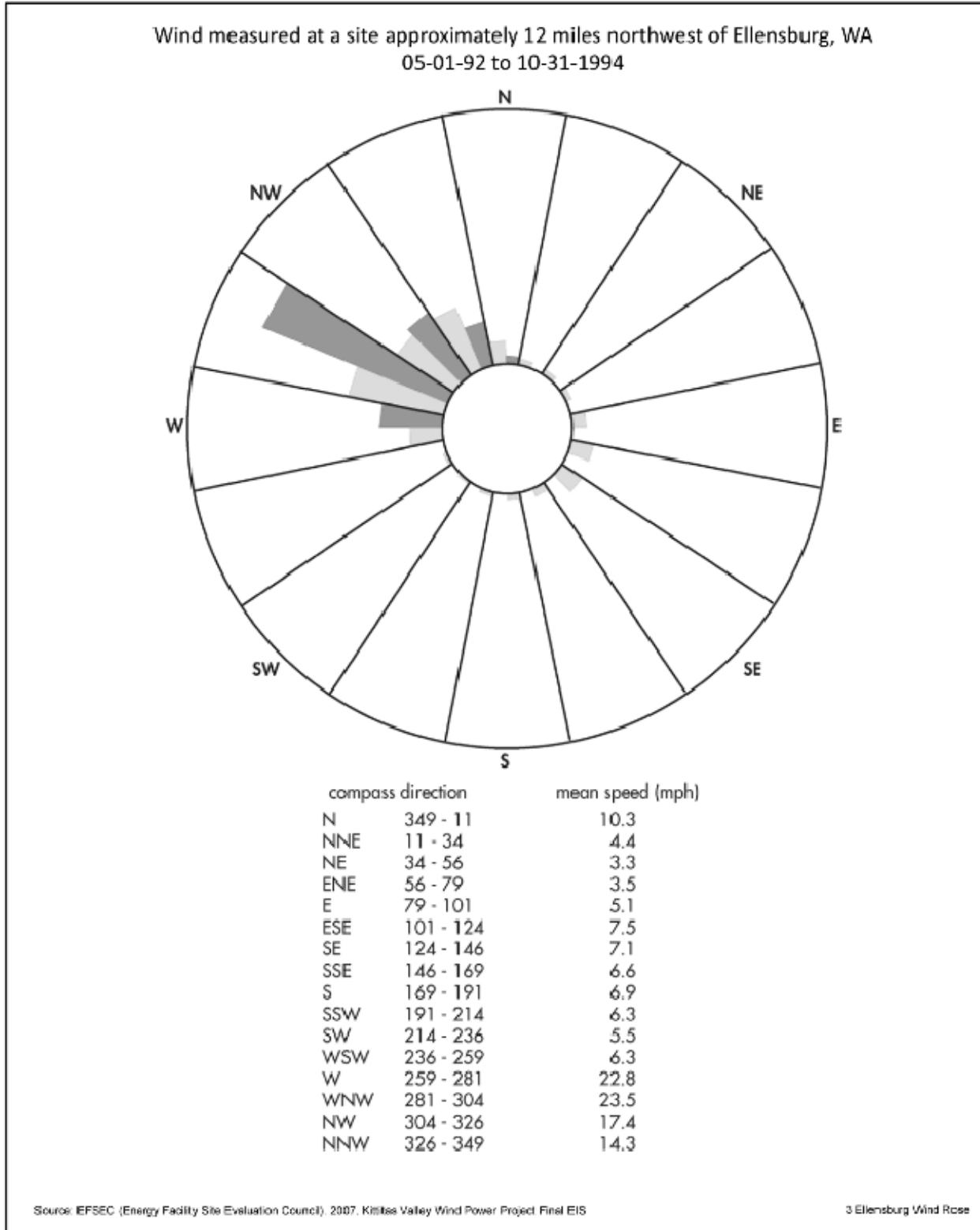


Figure 3-1. Kittitas Valley area wind rose.

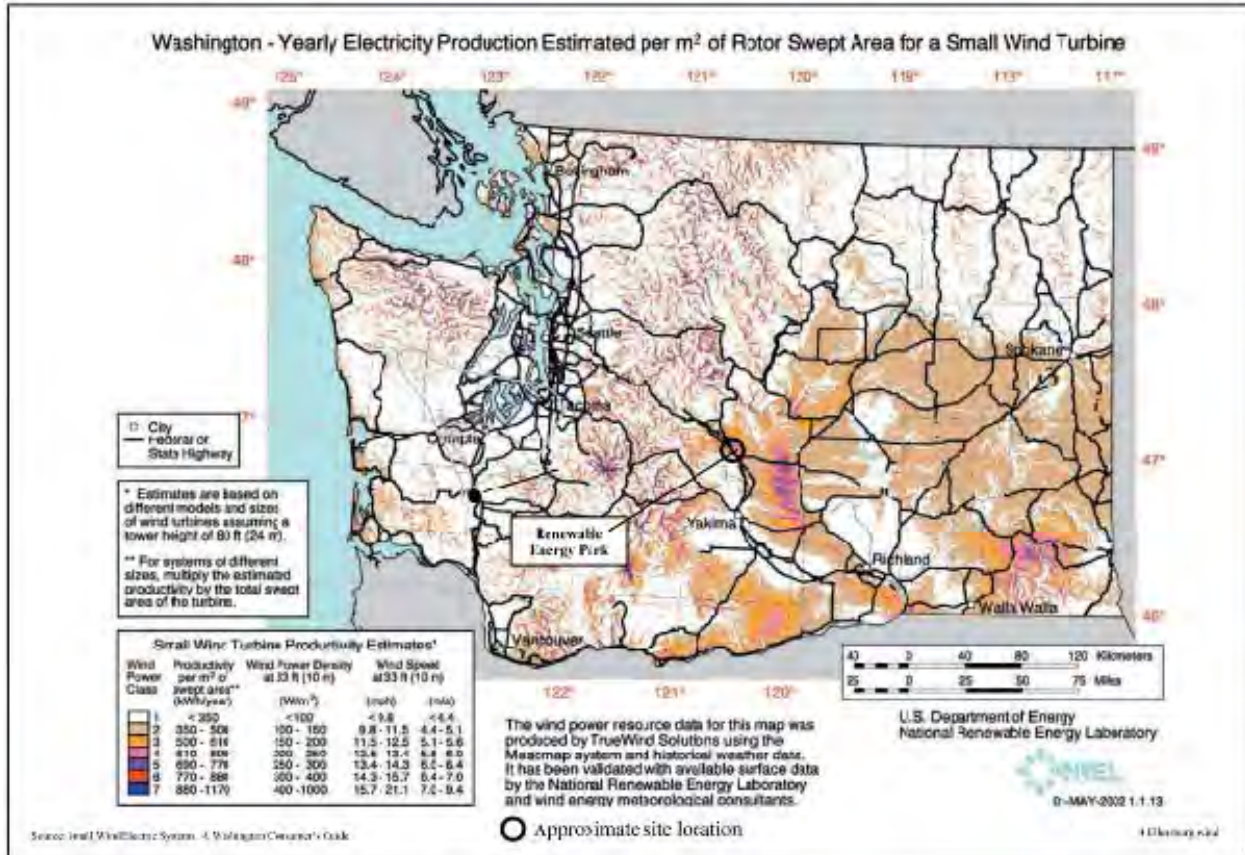


Figure 3-2. Wind power class at the proposed project site.

protection against decreased visibility and damage to animals, crops, vegetation, and buildings. NAAQS have been established for six criteria pollutants: carbon monoxide; lead; nitrogen dioxide; ozone; particulate matter (which includes particulate matter with an aerodynamic size less than or equal to 10 microns [PM₁₀] and less than or equal to 2.5 microns [PM_{2.5}]); and sulfur dioxide. Table 3-1 lists the NAAQS primary and secondary standards for each criteria pollutant. There are no ambient standards for volatile organic compounds, although these compounds and nitrogen oxides are considered to be precursor emissions responsible for the formation of ozone in the atmosphere. In addition to the NAAQS, the State of Washington has adopted its own ambient air quality standards that are not to be exceeded. Table 3-1 also lists the Washington standards.

Regions in compliance with the NAAQS are designated as attainment areas. The proposed project is located within Kittitas County, Washington, which is designated as in attainment for all NAAQS. The Washington State Department of Ecology, Central Regional Office is the clean air agency responsible for the county.

Table 3-1. Federal and Washington State ambient air quality standards.

Pollutant	Averaging Time	Federal standards ^a		Washington State standards ^b	
		Primary	Secondary	Primary	Details
Ozone	1 Hour	----	Same as Primary Standard	0.12 ppm	Not to exceed more than 1 day per calendar year
	8 Hour (2008 std)	0.075 ppm		----	----
Respirable particulate matter (PM ₁₀)	24 Hour	150 µg/m ³	Same as Primary Standard	150 µg/m ³	Not to exceed more than 3 days over 3 years with daily sampling
	Annual Geometric Mean	----		50 µg/m ³	3-year average of annual arithmetic mean concentration are not to exceed
Fine particulate matter (PM _{2.5})	24 Hour	35 µg/m ³	Same as Primary Standard	----	----
	Annual Arithmetic Mean	15 µg/m ³		----	----
Carbon monoxide	8 Hour	9 ppm (10 mg/m ³)	None	9.0 ppm (10 mg/m ³)	Not to exceed more than once in a calendar year
	1 Hour	35 ppm (40 mg/m ³)		35 ppm (40 mg/m ³)	Not to exceed more than once in a calendar year
Nitrogen dioxide	Annual Arithmetic Mean	0.053 ppm (100 µg/m ³)	Same as Primary Standard	0.05 ppm (100 µg/m ³)	Not to exceed in a calendar year
	1 Hour	0.100 ppm	None	----	----
Lead	Quarterly Average	1.5 µg/m ³	Same as Primary Standard	----	----
	Rolling 3-Month Average	0.15 µg/m ³	Same as Primary Standard	----	----
Sulfur dioxide	Annual Arithmetic Mean	0.03 ppm	----	0.02 ppm	Not to exceed in a calendar year

Table 3-1. Federal and Washing State ambient air quality standards (continued).

Pollutant	Averaging Time	Federal standards ^a		Washington State standards ^b	
		Primary	Secondary	Primary	Details
	24 Hour	0.14 ppm (365 µg/m ³)	----	0.10 ppm	Not to exceed more than once in a calendar year
	3 Hour	----	0.5 ppm (1300 µg/m ³)	----	----
	1 Hour	----	----	0.40 ppm	Not to exceed more than once in a calendar year
	1 Hour	----	----	0.25 ppm	Not to exceed more than twice in a consecutive 7-day period
	5 Minute	----	----	0.80 ppm	Does not apply to Kittitas County

a. National standards (other than O₃, PM₁₀, PM_{2.5} and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM_{2.5}, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

b. Source: Ecology 2010.

µg/m³ = micrograms per cubic meter.

ppm = parts per million.

3.1.1.2 Air Quality Conformity

Section 176(c)(1) of the *Clean Air Act* requires federal agencies to ensure that their actions conform to applicable implementation plans for the achievement and maintenance of the NAAQS for criteria pollutants. To achieve conformity, a federal action must not contribute to new violations of standards for ambient air quality, increase the frequency or severity of existing violations, or delay timely attainment of standards in the area of concern (for example, a state or a smaller air quality region). Federal agencies prepare written conformity determinations for federal actions that are in or that affect NAAQS nonattainment or maintenance areas when the total direct or indirect emissions of nonattainment pollutants (or their precursors in the case of ozone) exceed specified thresholds. Conformity with the EPA-approved state implementation plan is demonstrated if the project emissions fall below the threshold value *de minimus* emissions.

3.1.1.3 Greenhouse Gas Emissions

The burning of fossil fuels, such as diesel and gasoline, emits carbon dioxide, which is a greenhouse gas. Greenhouse gases can trap heat in the atmosphere and have been associated with global climate change. Global warming is the name given to the increase in the average temperature of the earth's near-surface air and oceans since the mid-20th century and its

projected continuation. The Intergovernmental Panel on Climate Change, in its Climate Change 2007: Synthesis Report, has stated that warming of the climate system is now considered to be unequivocal (IPCC 2007), with global surface temperature increasing approximately 1.33° F over the last 100 years.

Greenhouse gases are well mixed throughout the lower atmosphere, such that any emissions would add cumulatively to regional and global concentrations of carbon dioxide and other greenhouse gases. However, the effects from any individual source of greenhouse gases cannot be determined at this time.

3.1.2 ENVIRONMENTAL CONSEQUENCES

3.1.2.1 Proposed Project

Impacts to air quality during construction of the proposed project would be temporary and considered negligible. In general, the primary source of air pollutants during any construction project is usually attributed to the movement and operation of construction equipment. Construction activities would be temporary, would occur in a localized area, and emissions would be very small compared with existing emissions in Kittitas County. Contaminants generated from construction would include particulate matter, vehicle emissions, and wind-borne dust (fugitive dust).

Impacts to air quality during operation of the proposed project also would be negligible. The solar and small wind energy systems would not generate criteria pollutants or carbon dioxide. Because the proposed project would be located in Kittitas County, Washington, an area that has been designated as in attainment for all criteria pollutants, the proposed project would meet the conformity requirements of the *Clean Air Act*.

Carbon dioxide is the predominant greenhouse gas that would be generated during the proposed project (from construction and maintenance vehicles) since it is produced by combustion that occurs during the burning of fossil fuels. The carbon dioxide generated would be short term and negligible. An indirect benefit of the proposed project would be a small reduction in regional carbon dioxide emissions per year. The proposed project would produce a quantity of electricity via the solar and small wind energy systems that would therefore not need to be produced from the burning of fossil fuels via conventional electricity generation. The proposed project would slightly reduce regional greenhouse gas emissions.

3.1.2.2 No-Action Alternative

Under the No-Action Alternative, DOE would not provide funding to Battelle for the proposed Ellensburg project. As such, no changes or impacts would occur to existing air quality.

3.2 Noise

3.2.1 AFFECTED ENVIRONMENT

The proposed project site is just east of I-90 in the state of Washington. Adjacent properties include a recreational ball-field complex to the east and vacant land to north and to the southeast designated for light industrial uses. Irene Rhinehart Riverfront Park is located to the west on the other side of I-90. The nearest residence is approximately 0.5 mile to the northwest. The primary source of noise in the area is roadway traffic on I-90. Existing noise 50 feet from an interstate highway is typically 75 A-weighted decibels (dBA) (Hanson et al. 2006). No ambient noise data are available.

3.2.2 ENVIRONMENTAL CONSEQUENCES

3.2.2.1 Proposed Project

Potential noise impacts are not expected to be significant. Construction activities associated with the proposed project would generate temporary noise; however, construction noise would be localized to the immediate area within the proposed project site planned for the placement of the new solar and small wind energy systems. The project site is approximately 0.5 mile from the closest sensitive receptor (residential area to the northwest), and the noise levels are expected to comply with all local noise ordinances. The City regulates noise under Title 5, Chapter 5.60 of its municipal code (City of Ellensburg 2010). The solar panels would not generate noise. The ten concentrating solar modules would, however, emit noise. The noise level of a concentrating solar module is 65 dBA at 33 feet (Infinia n.d.). A concentrating solar module is composed of a parabolic dish, similar to a satellite dish that directs and concentrates sunlight onto a thermal receiver, which absorbs and collects the heat and transfers it to the engine generator. The engine and fan generate a buzzing sound. No sound is generated from the movement of the dish as it tracks the sun to collect the sunlight (Walker 2010).

Modern wind turbines, such as those that Battelle would install at the City of Ellensburg's Renewable Energy Park, have better insulation, lower rotation speeds, fewer moving parts, no gearboxes, and more efficient blades that make them much quieter than older turbines. Modern turbines emit sound that is barely discernible from ambient noise, even with a decibel meter. Sound from traffic, rustling trees, airplanes, and people often sufficiently mask the dull, low, "white noise" sounds a small turbine can make at certain wind speeds (AWEA 2008). The ambient noise level of most modern residential wind turbines is around 52 to 55 decibels, which means that while the sound of the wind turbine can be picked out of surrounding noise if a conscious effort is made to hear it, a residential-sized wind turbine is no noisier than an average refrigerator (DOE 2007). Only during short-term events, like severe storms or utility outages, do turbines make distinctive sounds, but in these occurrences, ambient sound levels increase as well (AWEA 2008). Most residential-sized wind generators are direct-drive devices with few moving parts. Unlike the commercial-scale turbines used in wind farms, they do not have high-speed transmissions. Thus, most of the sound that emanates from a residential-sized wind turbine is

aerodynamic noise caused by the blades passing through the air. Small wind turbines are variable speed devices, turning faster and thus creating more sound as wind speed increases. Most do not begin turning until a certain threshold, or “cut-in” wind speed is reached, typically about 7 miles per hour; therefore, on a calm, windless day (or night), the turbine is still and silent (AWEA n.d.a). Noise intrusion across a property line from a turbine that is set back 100 feet or more is typically very limited (AWEA 2008).

Sound decreases significantly with distance from the source (including the height of the wind tower). The energy in sound waves (and thus the sound intensity) drops with the square of the distance to the sound source. Thus, for stationary sources of noise, sound levels attenuate 6 decibels per doubling of distance (Hanson et al. 2006). The decibel scale is a logarithmic, or relative, scale; in that, as the sound pressure (or the energy in the sound) is doubled, the index increases by approximately 3. This means when two noise sources of the same level are added, the resulting sound level increases by 3 dBA, not doubled. The reason for measuring sound this way is that human ears (and minds) perceive sound in terms of the logarithm of the sound pressure rather than the sound pressure itself. Industry practice has generalized that if the sound level increases by 10 dBA, the subjective loudness of the sound is doubled. In the field, a 3-dBA change in sound level is considered a barely discernible difference. A change in sound level of 5 dBA typically results in a noticeable community response (Rogers et al. 2006).

The solar concentrating modules would generate the noticeable noise at the Renewable Energy Park. A person standing at the perimeter fence around the solar concentrating modules, assumed to be 50 feet from the modules, would experience a sound level of approximately 66 dBA. Although one module emits a sound level of 61 dBA at 50 feet, the person would experience a total of approximately 66 dBA from the nearest five modules. The other five modules would add a negligible increase to the total due to their greater distance from the person. The wind turbines would not increase the perceptible noise from the site since they are much quieter than the solar concentrating modules.

The City of Ellensburg has proposed an ordinance to regulate small energy wind systems. The proposed ordinance contains provisions for a maximum noise level generated by small energy wind systems. Audible sound from the operation of the wind systems shall not exceed 55 dBA for any period of time, when measured at the property line of any abutting property. The level, however, may be exceeded during short-term events such as utility outages or severe windstorms. Kittitas County is also proposing an ordinance to regulate small wind systems; this ordinance is currently under public review. The draft ordinance states that the audible sound from wind systems operations shall not exceed 55 dBA for any period of time as measured at the closest neighboring inhabited dwelling, except during short-term events such as utility outages and severe wind storms.

The proposed project would be in compliance with the local noise ordinance and with the proposed City and County ordinances currently being written that will regulate small wind energy systems. In addition, because the proposed project site is adjacent to I-90, traffic noise,

typically 75 dBA at 50 feet from an interstate, compared with the proposed Renewable Energy Park modifications, about 66 dBA at 50 feet from the solar concentrating modules, would remain the dominant noise in the area. The solar systems and wind turbines would not be heard at the nearest residences, approximately 0.5 mile away.

3.2.2.2 No-Action Alternative

Under the No-Action Alternative, DOE would not provide funding to Battelle for the proposed Ellensburg project. As such, no new sources of noise at the proposed project site would occur.

3.3 Aesthetics and Visual Resources

3.3.1 AFFECTED ENVIRONMENT

This section describes the existing aesthetic and visual resource conditions in the area of the proposed project site. Visual resources include natural and manmade physical features that provide the landscape its character and value as an environmental resource.

The proposed project site is located in a previously disturbed agricultural field directly east of I-90. Solar panels were first installed at the City of Ellensburg Renewable Energy Park in November 2006, with additional panels installed in 2008 and 2009. Currently, the park has 192 polycrystalline solar panels and 180 thin-film solar panels (Figure 3-3). The solar panels are arranged in eight rows of polycrystalline panels and two rows of thin-film panels. Vacant land is located to the north and vacant land designated for light industrial use is located to the southeast. A recreational ball-field complex is located to the east. The Irene Rhinehart Riverfront Park, Ellensburg's largest park, is located to the west on the other side of I-90 along the Yakima River. The Riverfront Park has two lake areas available, one for swimming and the other for non-motorized water sports, along with grassy areas and trails open to hikers, bikers, and horseback riders. Figures 2-1 and 2-2 show aerial photographs of the proposed project site. The nearest residences are located about 0.5 mile to the northwest. The viewshed includes views of the Cascade Mountain Range.



Figure 3-3. Current view of solar panels at the City of Ellensburg's Renewable Energy Park along the eastern side of I-90.

3.3.2 ENVIRONMENTAL CONSEQUENCES

3.3.2.1 Proposed Project

DOE does not expect potential impacts to aesthetics and visual resources to be significant. The proposed project would cause minor, short-term visual impacts resulting from ground disturbance; the presence of workers, vehicles, and equipment; and the generation of dust and vehicle exhaust associated with installing the solar systems, constructing the foundations for the wind systems, and erecting the towers. Battelle estimates the construction period would last 2 to 3 months. Once construction was complete, reclamation of disturbed areas would remove these visual impacts.

In the long term, the aesthetics of the area would change with the addition of six more rows (540 panels) of thin-film nanotechnology solar panels, ten solar concentrating modules, and eight wind turbine towers 40 to 100 feet in height located along an existing paved walking trail. Figure 2-3 identifies the proposed layout of the solar and wind systems. The solar panels would resemble the panels already installed at the site and would be placed just to the east of the existing eight rows of polycrystalline panels. The solar concentrating modules resemble a satellite dish, are about 18 feet in diameter, and would be erected about 2 feet above the ground in a line north of the solar panels (Figure 3-4). The parabolic dish would have a focal point to an aperture through which the light would focus into the engine that converts heat into electricity. Because the light would be focused in this manner, the light would not scatter and there would be no glare (Walker 2010).



Figure 3-4. Proposed solar concentrating modules.

To effectively operate at peak efficiency, a wind turbine needs unobstructed perpendicular access to the wind to capture and maximize the wind's energy. Small wind turbines must be mounted on tall towers because manmade and natural features close to the ground create unwanted turbulence. In addition, mounting the turbine on a tall tower takes advantage of higher wind velocities, which occur at greater heights above the ground. Wind power increases exponentially with wind velocity, so the same size turbine can generate up to 33 percent more power if mounted at 100 feet than at 65 feet.

A small wind turbine is mechanically simple, with only two or three moving parts. Most feature three blades of 2 to 15 feet in length, a generator located at the hub, and a tail. The turbine is mounted on a steel tower, which is designed as a freestanding monopole (like a street light), a lattice tower (like a radio tower), or a guyed monopole (like a street light with support cables from mid-tower to the ground). A monopole tower generally has the “tidiest” appearance of the three designs. Some models eliminate the traditional propeller-shaped blade design and instead feature a cylinder-like component that revolves similar to a barbershop pole or corkscrew.

Systems of this configuration are known as vertical axis turbines because the plane of rotation is perpendicular, or vertical, to the ground.

The proposed project would use different technologies for the eight small wind systems. The systems would likely include one traditional propeller-type unit and seven other types that could range from metal-bladed vertical shaft to fiberglass freeform horizontal or vertical designs. By metering each of the turbines separately, the City of Ellensburg would be able to evaluate each turbine's performance. This would allow a comparison of competing technologies using real-world data that currently do not exist. The towers would range in height from 40 feet to 100 feet. Four small wind systems (2 to 3 kW) on shorter towers would be placed on the south side of the walking trail. Four larger small wind systems (10 to 30 kW) on taller towers would be placed on the north side (Figure 2-3). Figures 3-5 and 3-6 show examples of these systems. The towers would be monopole or lattice design depending on the manufacturer's recommendation for the specific technology.



Figure 3-5. Examples of proposed small wind systems (2 to 3 kW).

The solar systems and wind towers would be visible from I-90 and the adjacent recreational complex. In addition, wind towers could be visible from some locations within Irene Rhinehart Riverfront Park (located west of I-90), particularly during the winter when the deciduous trees have lost their foliage. Since the focus of activity in the Park is the Yakima River, which borders the west edge of the park and two small lakes with improved access from the east, park users would typically face west, with their backs to the wind towers. It is also likely that the wind towers could be seen from the nearest residences located about 0.5 mile to the northwest (Figure 2-2).

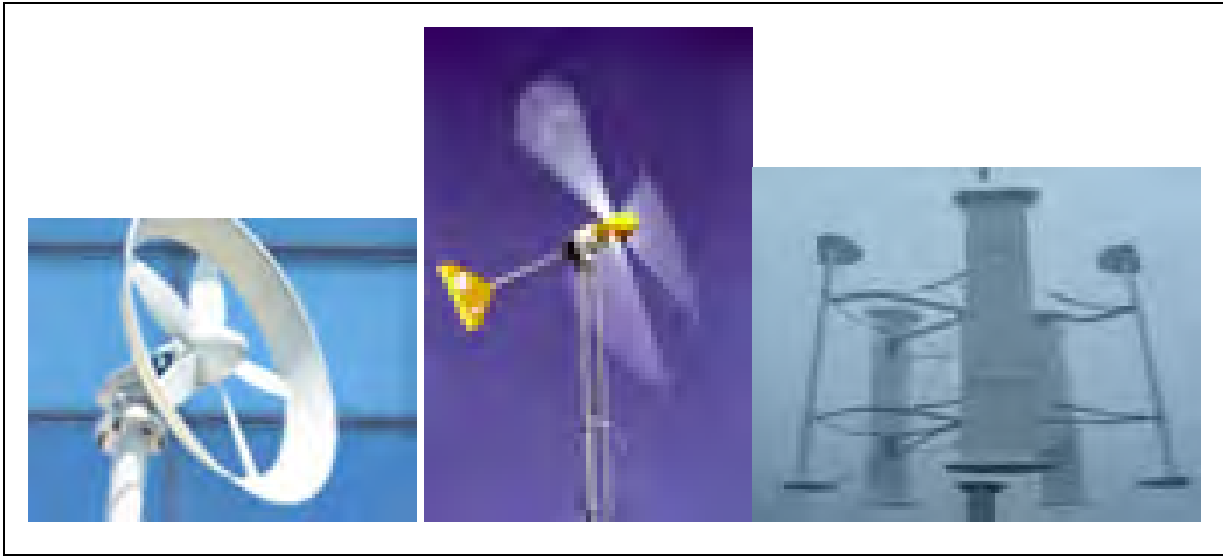


Figure 3-6. Examples of proposed small wind systems (10 to 30 kW).

Small turbines are designed to aesthetically blend in with their surroundings as much as possible. Studies show that turbines best blend into the sky when painted the factory-default color (AWEA 2008). Wind turbines vary in color, depending on the manufacturer, and can include white, gray, blue, and yellow. Manufacturers carefully consider the choice of color so the turbines blend into the sky. Wind turbine towers typically are galvanized by the tower manufacturer. When shipped, they are a bright silver color, but soon weather to a muted gray, disappearing into the landscape by blending in with the background or against the sky.

The visual impact of a wind turbine depends, to some extent, on the sensitivity of the viewer. Some individuals consider the aerodynamic design of the turbines graceful and modernistic, while others feel they are an unnatural intrusion to the natural scenery and viewshed. Utility poles, cellular phone towers, and satellite dishes might be considered comparable features of the existing landscape. With the proximity of large, commercial-scale wind farms in the region (see Section 4.1 for a description of the Vantage Wind Power Project, located approximately 20 miles southeast of Ellensburg) and the small wind systems used by individuals near Ellensburg, potential viewers might be familiar with and more accepting of wind systems and, therefore, less sensitive to their visual impacts. There are about 20 small wind systems countywide, with 15 located in the greater Ellensburg area (Titus 2010b). In addition, the City of Ellensburg encourages utility customers to install their own renewable energy systems such as solar photovoltaic panels and small wind turbines. In August 2007, the Ellensburg City Council approved a Net Metering Policy (Ordinance 4491) that ensures customers are credited for the excess power generated and delivered onto the City's local transmission system. With the development of the Renewable Energy Park, wind and solar systems would be available to citizens who are unable or prefer not to install a system on their property. Those who use the Renewable Energy Park or view renewable energy use favorably would be less likely to view the visual impacts of the proposed project in a negative manner.

The City of Ellensburg is proposing a city ordinance to regulate small energy wind systems. The City ordinance contains a number of requirements for visual appearance (13.43.050(B)), including setbacks and height limits (13.43.050(C)) to make wind systems compatible with existing uses allowed in the City. The ordinance states that each tower shall be set back from the nearest property line a distance no less than 1.1 times its tower height unless appropriate easements are secured from adjacent property owners, or other acceptable mitigation is approved by the zoning administrator. The ordinance limits any system to a maximum of 100 feet and requires that it be painted a non-reflective, non-obtrusive color such as the manufacturer's factory-default color or a color that conforms to the environment and architecture of the community, unless Federal Aviation Administration standards require otherwise. In addition, the ordinance states that no wind system shall be artificially lighted, except to the extent required by the Federal Aviation Administration or other applicable authority. Kittitas County is also in the process of developing an ordinance for regulating and permitting wind turbines. In January 2010, Kittitas County issued a Draft County Development Code, Chapter 17.61C, for community energy wind generators, and revisions were made in April 2010. The proposed code is currently under public review. These protective measures are provided in the proposed Kittitas County Draft County Development Code, Chapter 17.61C, for Community Energy Wind Generators (Kittitas County 2010).

Battelle's proposed project would comply with the proposed City and County ordinances. Significant impacts to visual resources are not expected.

3.3.2.2 No-Action Alternative

Under the No-Action Alternative, DOE would not provide funding to Battelle for the proposed Ellensburg project. As such, no changes to aesthetics or visual resources would occur.

3.4 Geology and Soils

3.4.1 AFFECTED ENVIRONMENT

This section describes the existing geology and soil conditions in the area of the proposed project site. Geologic and topographic conditions are discussed first, followed by an overview of soils and prime farmland.

The City of Ellensburg lies in the Kittitas Valley, in the eastern foothills of the Cascade Mountain Range. The Renewable Energy Park and the proposed project site is on the west edge of the City of Ellensburg in the SE/4 of Section 3, Township 17 North, Range 18 E, as shown on the United States Geological Survey Ellensburg South quadrangle map. The topography of the site is nearly flat, with an elevation of about 1,500 feet above mean sea level.

Geologic processes seen in the surrounding landscape include ongoing active tectonics and evidence of past volcanism, earthquakes, glaciation, and catastrophic flooding. The east-west trending Ellensburg Basin, covering approximately 6 square miles, is an alluvium-filled synclinal

valley created by the late-Miocene folding of the Columbia River Basalts. The Yakima River and its tributaries filled the basin with alluvium and volcanoclastic deposits, known as the Ellensburg Formation, into which most groundwater wells are completed (Tri County Water Resources Agency 2001). In general, well depths range from 10 to 1,200 feet below ground surface. The proposed project site is underlain by soils from the Zillah-Kayak complex, which is mainly sandy gravelly loam with 0- to 2-percent slopes. No prime farmland occurs at the proposed project site (NRCS 2010).

3.4.2 ENVIRONMENTAL CONSEQUENCES

3.4.2.1 Proposed Project

Potential impacts to geology and soils would not be significant. The solar panels, solar concentrating modules, and small wind energy systems would be located in an area that had been used previously for grazing and that is now being used to generate solar energy. Installation of the solar and wind systems would require relatively little excavation of native soil. Some soil would be converted to impervious surfaces to provide pads for the small wind energy systems. Installation activities would proceed according to the stipulations outlined in the City's construction permit, which would minimize potential soil erosion during installation activities.

3.4.2.2 No-Action Alternative

Under the No-Action Alternative, DOE would not provide funds to the proposed Ellensburg project. As such, no changes or impacts would occur to existing geology and soils.

3.5 Water Resources

3.5.1 AFFECTED ENVIRONMENT

This section describes the existing ground- and surface water resources on and in the area of the proposed project site. Surface water includes lakes, rivers, perennial, intermittent, or ephemeral streams, while groundwater comprises the subsurface hydrogeologic resources of the physical environment. This section also discusses wetlands and floodplains.

3.5.1.1 Surface Water and Groundwater

The proposed project site is located in the Kittitas Valley, in the upper reach of the Yakima River Basin. The Yakima River flows 215 miles from the Keechelus Lake outlet in the central Washington Cascades in a southeasterly direction to the Columbia River, draining an area of 6,155 square miles. The Yakima River Basin is one of the most intensively irrigated areas in the United States. Six high altitude reservoirs release water downstream, where it is diverted to Kittitas Valley farms, recharges groundwater, and then reemerges in the Yakima River to serve farms in the lower Yakima Valley. The U.S. Geological Survey has conducted numerous studies on the Yakima River Basin water resources, concluding that almost all groundwater in the basin emerges as surface water. The studies confirm that groundwater pumping is affecting surface

water use and existing water rights, including in the Kittitas Valley. The water-scarce basin is closed to new surface and groundwater permits (Center for Environmental Law and Policy 2010).

Reecer Creek, a small perennial tributary to the Yakima River, is located about 150 feet northwest of the proposed project site. Reecer Creek flows into the Yakima River inside the Irene Rhinehart Riverfront Park, less than 0.5 mile southwest of the proposed project site (Figure 2-1). During the 1999 irrigation season (April through October), the daily average discharge of Reecer Creek ranged from a high of about 68 cubic feet per second to a low of about 4 cubic feet per second (Ecology 2000). Restoration of the Reecer Creek floodplain is planned to begin summer 2010 (see Section 4.1).

3.5.1.2 Groundwater

The proposed facility would involve no use of groundwater or discharges that could adversely affect groundwater. Since there is no potential to impact groundwater, there is no basis for further discussion or analysis of groundwater as part of the affected environment.

3.5.1.3 Wetlands

DOE regulations at 10 CFR Part 1022, “Compliance with Floodplain and Wetland Environmental Review Requirements,” implement the requirements of Executive Order 11990, *Protection of Wetlands*. These regulations require, among other things, that the Department notify appropriate government agencies [U.S. Army Corps of Engineers(wetlands) or Federal Emergency Management Agency (100-year floodplain)] and interested parties of a proposed wetland action; conduct a wetlands assessment to evaluate the impacts of that action to wetlands in an EA or environmental impact statement; consider alternatives that would avoid or minimize impacts to wetlands; design or modify the action to minimize potential harm to wetlands; and allow for public review and comment of the analysis.

Neither the National Wetland Inventory (USFWS 2010c) nor the Washington State Department of Natural Resources Forest Practices Application Review System (WADNR n.d.) identifies wetlands within or immediately adjacent to the proposed project site. Likewise, no hydric soils, or wetlands vegetation, which can be an indicator of wetlands, are identified on the proposed project site on either the Natural Resources Forest Practices Application Review System or the U.S. Department of Agriculture’s Natural Resources Conservation Service National Hydric Soils List (by state). Section 3.6.1.4 of this EA discusses the biological importance of nearby wetlands.

3.5.1.4 Floodplains

Executive Order 11988, *Flood Plain Management*, requires that development in floodplains be avoided if practicable. Flood Insurance Rate Maps published by the Federal Emergency Management Agency show flood zone evaluations that cover the proposed project site from

1981. The flood map indicates the proposed project site is within a 100-year flood zone of shallow flooding, with expected depths of about 1 to 3 feet (FEMA 2010).

3.5.2 ENVIRONMENTAL CONSEQUENCES

3.5.2.1 Proposed Project

The proposed project would not significantly affect drainage and runoff from the proposed project site, which currently flows to an area of agricultural activity. The solar and small wind energy systems would be installed in accordance with terms under a city construction permit, which would ensure management of storm water runoff so that the area down gradient would be protected. Some soil would be converted to impervious surfaces to provide pads for the wind systems; these impervious surfaces would be small and would not be expected to significantly impact surface water infiltration. There should be little potential for adverse impacts to area surface water as a result of construction.

Operations and maintenance of the solar and small wind energy systems would involve no discharge of liquids or wastes of any type to the ground. Operations and maintenance would have not impact surface water.

As described in Section 3.5.1.2, there would be no impacts to groundwater from the proposed project, as it would not involve use of groundwater or discharges that could adversely affect groundwater.

No wetlands occur on or immediately adjacent to the proposed project site. Activities at the proposed project site do not have the potential to impact nearby wetlands.

The proposed project site is within the 100-year flood zone for shallow flooding. Although Executive Order 11988, *Flood Plain Management*, requires that development in floodplains be avoided if practicable, in this case, the proposed project site is already in use as a renewable energy park. The solar and small wind energy systems that would be erected are generally simple structures, not requiring a great deal of associated infrastructure that could be damaged by shallow flooding nor do these structures provide substantial cross-sectional area to impact established 100 year flood elevations. In addition, no personnel would be permanently stationed at the Renewable Energy Park as a result of the proposed project. No backwater impacts to the floodplain or the renewable energy systems due to their location in a floodplain are expected.

3.5.2.2 No-Action Alternative

Under the No-Action Alternative, DOE would not provide funding to Battelle for the proposed Ellensburg project. As such, no changes or adverse impacts would occur to existing water resources.

3.6 Biological Resources

3.6.1 AFFECTED ENVIRONMENT

This section describes existing biological resources at the proposed project site. It focuses on plant and animal species or habitat types that are typical or are an important element of the ecosystem, are of special category importance (of special interest due to societal concerns), or are protected under state or federal law or statute regulatory requirement.

Kittitas County is located in central Washington and lies within the Umatilla Plateau of the Columbia Plateau Ecoregion (EPA 2010b). This region is characterized by arid sagebrush steppe and grassland communities, surrounded on all sides by moister, predominantly forested, mountainous ecological regions. Soils low in organic matter and clay dominate the region due to the lack of moisture (Clarke and Bryce 1997). However, the region is covered in some places by loess soils that have been extensively cultivated for wheat, particularly in the eastern portions of the region where precipitation amounts are greater (EPA 2007).

The city of Ellensburg lies to the east of I-90, a major highway that generally traverses the state from east to west. The Yakima River, a tributary to the Columbia River, follows I-90 on the west side of the highway and provides the arid region with water for irrigating the surrounding agricultural lands. The proposed project site is less than 0.5 miles east of the Yakima River on the western edge of the city.

3.6.1.1 Vegetation

Native vegetation characteristic of the Umatilla Plateau sub region includes bluebunch wheatgrass (*Agropyron spicatum*), Idaho fescue (*Festuca idahoensis*), rose (*Rosa* spp.), hawthorn (*Crataegus* spp.), and common snowberry (*Symphoricarpus albus*) (Clarke and Bryce 1997). Agricultural conversion and development of the area have eliminated historical native vegetation on the proposed project site, where pasture grasslands now dominate.

Limited connectivity to other habitats occurs through the proposed project site. To the south of the project site is an area designated for light industrial use and to the east is a recreational ball-field complex. Directly west of the project site is I-90 and the Yakima River, which harbors a series of wetlands habitats that provide vegetative habitat to species in the area. Agriculturally disturbed habitat with clumped groups of introduced crack willows (*Salix fragilis*) occur east of the project site.

3.6.1.2 Wildlife

Based on the historical disturbance of the proposed project site and the existing solar farm, the lack of connectivity to intact natural habitats, and its proximity to industrial disturbance especially from I-90, expected use of the project site by wildlife is low. Wildlife might concentrate movements on the north end of the project site where a vegetated trail and Reecer

Creek cross under the highway. This corridor offers wildlife a safer passage to the riparian and forested habitat west of I-90.

The disturbed pastureland of the proposed project site provides suitable habitat for small mammals such as voles (*Microtus spp.*) and deer mice (*Peromyscus spp.*). These small mammals in turn attract raptors to the areas such as red-tailed hawks (*Buteo jamaicensis*) and American kestrel (*Falco sparverius*). Transitory use by bald eagles (*Haliaeetus leucocephalus*) may occur as the eagles travel to the open water areas of the Yakima River for foraging. The open grassland area of the project site can provide potential habitat for the Western meadowlarks (*Sturnella neglecta*), while the edge-tolerant species such as the California quail (*Callipepla californica*), song sparrow (*Melospiza melodia*), western bluebirds (*Sialia mexicana*), and American goldfinch (*Carduelis tristis*) might be found in the transition area between the pastureland/grasslands of the project site and the riparian corridor of Reecer Creek.

Although limited denning opportunities exist in the area near the proposed project site, striped skunks (*Mephitis mephitis*), foxes (*Vulpes vulpes*), and coyotes (*Canis latrans*) could also use the pastureland habitat year round. White-tailed deer (*Odocoileus virginianus*) and mule deer (*O. hemionus*) frequent the area and might forage in the project site although are more likely traversing the area for forage and shelter in the forested wetland habitat. Although rare, both cougar (*Puma concolor*) and elk (*Cervus elaphus*) have been documented within the Ellensburg area and might also use the vegetated corridor under I-90 to the Yakima River.

Beaver (*Castor canadensis*) and muskrat (*Ondatra zibethicus*) can be found along and using the Yakima River. Red winged blackbirds (*Agelaius phoeniceus*), great blue herons (*Ardea herodias*), and great horned owls (*Bubo virginianus*) use the wetlands and treed areas that surround the project site.

3.6.1.3 Sensitive Species

The U.S. Fish and Wildlife Service administers the *Endangered Species Act* of 1973, as amended. This law provides federal protection for species designated as federally endangered or threatened. An endangered species is “in danger of extinction throughout all or a significant portion of its range,” and a threatened species “is likely to become an endangered species within the foreseeable future” (USFWS 1988). Special status species are listed as threatened or endangered, are proposed for listing, or are candidates for listing by the state and/or federal government.

Ten species classified as threatened, endangered, proposed, or candidate under the *Endangered Species Act* are known to occur in Kittitas County (Table 3-2). In addition, one mammal, one bird, and 13 plant species are listed as state endangered or threatened in Kittitas County. Habitat is not available to support the three, large, federally listed carnivore species in this portion of the county. The scarcity of large trees on the proposed project site as well as in the surrounding area reduce the potential of suitable habitat for the candidate mammal species, the fisher (*Martes pennanti*), and the three federally listed bird species: marbled murrelet (*Brachyramphus*

marmoratus), spotted owl (*Strix occidentalis caurina*), and yellow-billed cuckoo (*Coccyzus americanus*). In addition, the Ellensburg area is considerably outside the foraging range for the marbled murrelet (Mack et al. 2003). Kittitas County contains designated critical habitat for both the spotted owl and the bull trout (*Salvelinus confluentus*). The spotted owl Southeast Washington Cascades and Entiat critical habitat subunits are located in the western and northern portion of the county and do not overlap the project site (USFWS 2008). Although Reecer Creek, a fish bearing stream, borders the northern portion of the proposed site and eventually feeds into the Yakima River, Reecer Creek is not consider part of the Yakima River subunit critical habitat for bull trout (USFWS 2010b).

Lack of wetlands and moist habitats on the site reduces the likelihood that several state-listed plant species exist on the proposed site (Table 3-2). In addition, native vegetation and forest habitat is not available at the site due to the agricultural use of the area, and thus the potential occurrence by the Western Gray squirrel (*Sciurus griseus*) and other forest and shrub-steppe dependent avian and plant species is low. Washington is the northwest corner of the ferruginous hawk (*B. regalis*) breeding range (Watson 2003). Although the species is listed in Kittitas County and potential open habitat might be available at the project site, the species is more likely to be found in the southwest section of the county in native habitat.

On May 3, 2010, DOE sent a consultation letter to the U.S. Fish and Wildlife Service requesting input into the flora and fauna of the area. DOE’s letter is provided in Appendix B of this EA. The U.S. Fish and Wildlife Service response dated June 1, and documentation of follow-up communications on June 11 and 14, 2010 are provided in Appendix B.

Table 3-2. Federal and state-listed endangered and threatened species potentially occurring in Kittitas County, Washington^a.

Common Name	Scientific Name	Status ^b	Habitat
Mammal			
Gray wolf	<i>Canis lupus</i>	FE/SE	Wide variety of habitats, from arctic tundra to forest, prairie, and arid landscapes
Grizzly bear	<i>Ursus arctos horribilis</i>	FT/SE	Coniferous forests
Canada lynx	<i>Lynx Canadensis</i>	FT/ST	Subalpine and high elevation mixed conifer zones in the mountains with dense snowshoe hare populations
Fisher	<i>Martes pennanti</i>	FC/SE	West Coast distinct population segment; forested habitat
Western gray squirrel	<i>Sciurus griseus</i>	ST	Transitional forests of mast-producing Oregon white oak, ponderosa pine, and Douglas-fir
Birds			

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Marbled murrelet	<i>Brachyramphus marmoratus</i>	FT/ST	Nests in old-growth conifer forests and forages in nearby ocean environments
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Table 3-2. Federal and state-listed endangered and threatened species potentially occurring in Kittitas County, Washington^a (continued).

Common Name	Scientific Name	Status ^b	Habitat
Northern spotted owl	<i>Strix occidentalis caurina</i>	FT/SE	Variety of forest types and stand structures.
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	FC	Forested streamsides
Ferruginous hawk	<i>Buteo regalis</i>	ST	Inhabit dry, open country of the plains, prairies, grassland, shrub-steppe, and deserts
Sage grouse	<i>Centrocercus urophasianus</i>	ST	Columbia Basin distinct population segment; sage brush
Fish			
Bull trout	<i>Salvelinus confluentus</i>	FT	Columbia River distinct population segment
Plants			
Ute ladies' tresses	<i>Spiranthes diluvialis</i>	FT	Riparian edges, gravel bars, old oxbows, high flow channels, and moist to wet meadows along perennial streams
Pasqueflower	<i>Anemone patens var. multifida</i>	ST	Ponderosa pine-Douglas fir forests and grasslands dominated by needle-and-thread grass
Palouse milk-vetch	<i>Astragalus arrectus</i>	ST	Grassy hillsides, sagebrush flats, river bluffs, and open ponderosa pine/Douglas fir forests
Large-awn sedge	<i>Carex macrochaeta</i>	ST	Moist or wet, open places, and frequently is found near the coast
Beaked cryptantha	<i>Cryptantha rostellata</i>	ST	Occurs within some of the driest microsites within the Columbia Basin
Wenatchee larkspur	<i>Delphinium viridescens</i>	ST	Moist meadows, moist microsites in open coniferous forests, springs, seeps and riparian areas
White eatonella	<i>Eatonella nivea</i>	ST	Shrub-steppe vegetation type on poorly developed soils in dry, sandy or volcanic desert areas
Basalt daisy	<i>Erigeron basalticus</i>	ST	Crevice in basalt cliffs on canyon walls exclusively along the Yakima River and Selah Creek

Howell's rush	<i>Juncus howellii</i>	ST	Wet, bouldery areas at the base of a basalt cliff in riparian zones above 2800 feet
Nuttall's sandwort	<i>Minuartia nuttallii</i> <i>ssp. fragilis</i>	ST	Open, gravelly benches or limestone talus from open sagebrush hills to alpine slopes

Table 3-2. Federal and state-listed endangered and threatened species potentially occurring in Kittitas County, Washington^a (continued).

Common Name	Scientific Name	Status ^b	Habitat
Adder's-tongue	<i>Ophioglossum pusillum</i>	ST	Pastures, old fields, roadside ditches, and flood plain woods in seasonally wet, rather acid soil
Least phacelia	<i>Phacelia minutissima</i>	SE	Moist open places at middle elevations
Wenatchee Mountain checker-mallow	<i>Sidalcea oregana</i> var. <i>calva</i>	SE	Moist meadows that have surface water or saturated upper soil profiles into early summer
Hoover's tauschia	<i>Tauschia hooveri</i>	ST	Basalt lithosols within shrub-steppe habitats

a. Species lists compiled from USFWS.2010a; WNH 2009; Washington Department of Fish and Wildlife 2009a, b.

b. Listing Status: FE – Listed as Federally endangered; FT – Listed as Federally threatened; SE – Washington state-listed as endangered; ST- Washington state-listed as threatened

3.6.1.4 Wetlands

The U.S. Army Corp of Engineers classifies wetlands based on three criteria: hydrology, soil type, and vegetation. Specifically, wetlands are those areas that are saturated or inundated by water, sufficient to support vegetation typically adapted to saturated soils (USACE 1987). Surface water features, which include intermittent and perennial streams, including wetlands are generally considered “waters of the U.S.” by the U.S. Army Corps of Engineers and, under the Corps’ definition of “jurisdictional waters/features,” are protected under Section 404 of the *Clean Water Act*. No wetlands were identified on or immediately adjacent to the proposed project site using both the USFWS’ National Wetland Inventory and the Washington Department of Natural Resource’s Forest Practices Application Review System activity mapping tool. Several forested wetlands occur to the south and west of the proposed project site, the nearest along the Yakima River about 1,100 feet from the site (Figure 3-2) (WADNR n.d.; USFWS 2010c).

3.6.2 ENVIRONMENTAL CONSEQUENCES

3.6.2.1 Proposed Project

Construction of the solar panels, solar concentrating modules, and small wind energy systems at the City of Ellensburg's Renewable Energy Park would result in disturbance of about 3 acres of low-quality habitat for plants and animals. Construction of the wind turbine towers would require concrete pads or small foundations for the base, which would result in disturbance of a relatively small amount of soil and surrounding vegetation. Likewise, installation of the solar panels and solar concentrating solar modules would result in soil and vegetation disturbance. Often, the soil is sterilized and/or a gravel layer is added underneath the solar systems to prevent weed and natural vegetation growth (NREL 2010). Natural vegetation in the proposed project area is non-existent due to previous disturbance; therefore, no impacts to natural habitats would occur. However, construction would destroy potential habitat for small mammals as well as foraging habitat for raptors, although the impacts would be short term and species could forage in the surrounding areas. The loss of habitat would not adversely impact any plant or animal species, as the proposed project site is small, located in a disturbed area, isolated from large tracts of undisturbed habitat, and adjacent to a recreation park. The plant and animal species found on the site are common and widespread and no rare species are expected to occur.

No animal or plant species classified in Kittitas County as threatened, endangered, or candidate under the *Endangered Species Act* occur in or near the project site; therefore, DOE has concluded there would be no impacts to federally listed species. Critical habitat for the bull trout and spotted owl does not occur on the proposed site; therefore, no impacts to these species or habitat are expected. No Washington State-listed species are expected to occur on the site.

Wind towers have been found to affect both bird and bat species in several ways:

- Species could be killed or injured by colliding with rotors, towers guy wires, or related structures on wind towers;
- Birds and bats might avoid wind energy developments and surrounding habitat;
- Habitat could be directly impacted by the footprint of the turbines, roads, power lines, and auxiliary buildings (AWEA and ABC 2004); and
- Mortalities from the operation of the small wind turbines are likely to be minimal for the following reasons: (1) the habitat of the proposed project is already disturbed and is not known to be a potential migration route, thus reducing the number of potential avian species in the area; (2) no seasonal concentration of avian species occurs in the project area due to the relatively low habitat value; and (3) the area does not contain topographic features that potentially could funnel migrating bats and birds. Five bat species potentially occur in the area, although roosting and foraging habitat is not found on the project site (UW n.d.). The hoary bat (*Lasiurus cinereus*) and the fringed myotis (*Myotis*

thysanodes) roost in wetlands or wooded areas and might traverse the project site in route to preferred habitat along the Yakima River. However, there is a relatively large area of wetlands along several miles of the Yakima River near Ellensburg that are more suitable habitat for these species than the project site. There is potential for migratory bird species to nest on the proposed project site. The *Migratory Bird Treaty Act* prohibits harming migratory birds and their nests; therefore, the City of Ellensburg would take actions, as described below, to ensure that wind system installation and operation would not harm migratory birds and their nests.

Guyed, lattice, and monopole towers are used to support wind turbines and might be used in the proposed project. The use of monopole towers instead of lattice towers can prevent raptors from perching, which would reduce the potential for mortalities (WDFW 2009c); however, protective measures can be taken to reduce wildlife impacts if monopole towers are not used. To minimize avian mortality, guyed towers can be outfitted with appropriate bird flight diverters attached to the guy wires, and horizontal members can be omitted from use in the lattice towers. These protective measures are provided in the proposed Kittitas County Draft County Development Code, Chapter 17.61C, for Community Energy Wind Generators. Battelle would coordinate with the City of Ellensburg to assure that protective wildlife measures would be incorporated into this project as best as practicable, and still adhere to manufacturers' tower requirements.

The eight wind towers would be configured to be perpendicular and low on the horizon to the potential flight path of flying species crossing the proposed project site toward the preferred wetlands habitat. This configuration is likely to reduce potential collisions with the propeller, as it would result in a smaller footprint.

DOE concluded that development of 3 acres for the proposed project would not significantly impact any plant or animal species because the proposed project site is small and isolated from larger tracks of undisturbed land, and because plant and animal species found there are common and widespread in the region. The proposed project would have no effect on species protected under the federal *Endangered Species Act*, and no State-protected species are expected to be found on the site. No impacts to wetlands are expected to occur since wetlands are not located on or immediately adjacent to the project site, and project activities would not have the potential to impact offsite wetlands. The risk of collisions with the wind turbines by migratory birds and bats would be minimal due to the configuration of the turbines (parallel to bird movements towards the wetlands and grouped configuration) and placement in previously disturbed habitat (Erickson 2008). The U.S. Fish and Wildlife Service concurs with DOE's conclusion of no effects regarding species protected under the federal *Endangered Species Act* and with DOE's assessment of the project's low risk to migratory birds (Appendix B).

3.6.2.2 No-Action Alternative

Under the No-Action Alternative, DOE would not provide funding to Battelle for the proposed Ellensburg project. As such, no changes or impacts would occur to existing biological resources.

3.7 Cultural Resources

3.7.1 AFFECTED ENVIRONMENT

The area of potential effect for cultural resources includes the property within and immediately adjacent to the proposed project site that would be affected by the project, either temporarily during construction or permanently throughout operations. Cultural resources are defined as historic properties, cultural items, archaeological resources, sacred sites, and collections and associated records as defined by the *National Historic Preservation Act*, *Native American Graves and Repatriation Act*, *Archaeological Resources Protection Act*, Executive Order 13007 to which access is afforded under the *American Indian Religious Freedom Act*, and 36 CFR Part 79, respectively.

3.7.1.1 Status of Cultural Resource Inventories and Section 106 Consultations

On April 28, 2010, DOE submitted documentation to the Washington State Historic Preservation Officer, explaining DOE's conclusion that no historic properties would be affected, as required by 36 CFR Part 800, the implementing regulations for the *National Historic Preservation Act*. That submittal letter is included in Appendix B of this EA. On May 3, 2010, the Washington State Historic Preservation Officer responded, requesting additional information. The City of Ellensburg retained Central Washington Anthropological Survey of Central Washington University to conduct a cultural resources inventory for the area of potential effect (project site). As part of the inventory, Central Washington Anthropological Survey conducted literature research and a 5-meter interval pedestrian survey for the proposed expansion project area of potential effect as well as a subsurface survey within a limited portion of the project footprint. Field work was completed in June 2010 and is documented in the *Cultural Resource Inventory for the City of Ellensburg Solar Community Expansion Project, Kittitas County, Washington* provided in Appendix D of this EA. The archaeological survey did not identify archaeological resources within the project area of potential effect. Based on the conclusions of the cultural resources inventory, DOE determined that no historic properties would be affected by Battelle's project. DOE submitted the archaeological survey to the SHPO on July 15, 2010. The State Archaeologist concurred with DOE's determination in its letter dated July 20, 2010. Copies of these letters are provided in Appendix B of this EA..

3.7.1.2 Native American Resources

No American Indian concerns regarding the proposed project have been identified. According to the Department of Housing and Urban Development, Office of Community Planning and Development database, there are two federally recognized tribes with interests in Kittitas County, Washington: (1) Confederated Tribes and Bands of the Yakama Indian Nation, and (2) the Confederated Tribes of the Colville Reservation. On April 28, 2010, DOE initiated consultation with these two tribes. DOE's letters are included in Appendix B of this EA. In addition, DOE submitted the archaeological survey to both tribes on July 15, 2010. No responses or comments were received.

3.7.2 ENVIRONMENTAL CONSEQUENCES

3.7.2.1 Proposed Project

DOE does not expect Battelle's proposed project to directly impact cultural resources or historic properties. There are no sites listed on the National Register of Historic Places within 0.5 mile of the project site (DAHP 2009).

In the event cultural resources (such as human remains, tools, pottery, remnants of older construction) are discovered during the expansion of the City of Ellensburg's Renewable Energy Park, work would cease in the area of the discovery, and the Washington State Historic Preservation Officer would be notified. A qualified archaeologist or a designated representative of the State Archaeologist would evaluate any such discovery and, in consultation with the State Historic Preservation Officer, implement appropriate mitigation measures before construction activities would resume.

3.7.2.2 No-Action Alternative

Under the No-Action Alternative, DOE would not provide funding to Battelle for the proposed Ellensburg project. As such, no changes or impacts would occur to any existing cultural resources.

3.8 The Relationship between Local Short-Term Uses of the Environment and the Maintenance and Enhancement of Long-Term Productivity

Council on Environmental Quality regulations that implement the procedural requirements of NEPA require consideration of the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity (40 CFR 1502.16). Installation and operation of the proposed solar and wind systems would require short-term use of land and other resources. Short-term use of the environment, as used here, is that used during the life of the wind systems, whereas long-term productivity refers to the period of time after the equipment has been decommissioned and removed. The short-term use of the project site and other resources for Battelle's proposed project would not impact the long-term productivity of the area. When it is time to decommission and remove the solar panels, concentrating solar modules, and small wind energy systems, the land and facilities occupied by those systems could be used for other industrial purposes, or the land could be reclaimed and revegetated to resemble pre-disturbance conditions.

3.9 Irreversible and Irretrievable Commitments of Resources

There would be an irretrievable commitment of the land and facilities at the proposed project site. The City of Ellensburg had previously dedicated this parcel of property to the production of

renewable energy, and the proposed project would support this mission. There would also be a commitment of materials used to manufacture and the renewable energy systems.

3.10 Unavoidable Adverse Impacts

Installation and operation of the solar and small wind energy systems would cause unavoidable visual impacts to the immediate area. DOE anticipates such impacts would be minimized by adherence to the City's and County's forthcoming regulations for wind turbines as well as the general acceptance of solar and wind as renewable energy resources within the community. This project also would cause an unavoidable increase in noise at the City of Ellensburg's Renewable Energy Park and adjacent areas. Noise increases in the area would be relatively small compared with the existing sound levels in the area generated by traffic from I-90. Unavoidable adverse impacts to wildlife, especially birds, could occur from the wind turbines. Again, impacts could be minimized through adherence to the City's and County's forthcoming regulations for wind turbines.

4. CUMULATIVE IMPACTS

Council on Environmental Quality regulations stipulate that the cumulative impacts analysis in an EA consider the potential environmental impacts resulting from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such actions (40 CFR 1508.7). Because the impacts of the proposed project generally would be minor and localized (see Section 3), DOE focused this evaluation of cumulative impacts on activities immediately surrounding the proposed project site and other past, present, and reasonably foreseeable future actions on and around City of Ellensburg's Renewable Energy Park. Conditions resulting from past and ongoing activities are included in the descriptions of the affected environment in Chapter 3 of this EA. The following sections describe reasonably foreseeable future actions (Section 4.1) and the incremental cumulative impacts of installation and operation of the proposed solar panels, solar concentrating modules, and small wind energy systems (Section 4.2).

4.1 Reasonably Foreseeable Actions

To identify reasonably foreseeable actions in and around the City of Ellensburg's Renewable Energy Park, DOE primarily considered information from City of Ellensburg staff on the planned expansion and development of the Renewable Energy Park, the adjacent recreation park, and the adjacent areas planned for industrial parks. DOE also examined City of Ellensburg and Kittitas County planning documents. Reasonably foreseeable actions are summarized below.

- Continued solar expansion at the City of Ellensburg's Renewable Energy Park. After installation of the proposed solar panels and solar concentrating modules, the total solar output at the Energy Park would be about 140 kW. The physical site set aside for renewable energy systems has space for up to 500 kW of renewable systems if the City chooses to further expand the project at some time in the future.
- Future industrial parks. The City of Ellensburg is planning to construct two industrial parks in the vicinity of the Renewable Energy Park. The largest, about 300 acres, would be located southeast of the Renewable Energy Park and south of the recreation park (Figure 2-2). The downturn in the economy has delayed any immediate plans to develop the property. The City is also planning to develop a smaller industrial park at the north end of the property, the timing of which is dependent on roadway improvements, which are in the design phase.
- Recreation park. The City of Ellensburg is planning to add lighting to the baseball and softball fields at the adjacent recreation park. Lighting structures are expected to be about 60 to 70 feet tall, and the timing for the ball-field lighting is contingent on receipt of grant funding. In addition, the City is planning to develop a basketball court and two additional softball fields at the recreation park.

- Reecer Creek Floodplain Restoration Project. The Kittitas County Conservation District has recently completed improvements along Lower Reecer Creek, including removal of one gravity diversion structure (barrier), which was replaced with a pump station and pipeline (Kittitas County Conservation District n.d.). A number of agencies, including the Kittitas County Conservation District, the Washington Department of Fish and Wildlife; the Yakima Tributary Access & Habitat Program; the Mid-Columbia Regional Fisheries Enhancement Group, and the City of Ellensburg are working to implement the Reecer Creek Floodplain Restoration Project. The project encompasses the 69-acre floodplain of Reecer Creek immediately adjacent to and northwest of the soccer field shown in Figure 2-1. The project, which is scheduled to begin during the summer of 2010, will include flood control, levee setback, habitat restoration, construction of trails, and educational opportunities. In addition, the Yakama Nation is reintroducing coho salmon into Reecer Creek. Future plans include replacement of the undersized Dolarway Bridge (Ready 2008).
- Small wind energy systems in the City of Ellensburg and the proposed city ordinance. The City of Ellensburg encourages utility customers to install their own renewable energy systems, such as solar photovoltaic panels and small wind turbines. The City of Ellensburg is in the process of developing a new city code, City Code Chapter 13.43, to regulate small wind energy systems. The purpose of the new code is to facilitate installation and construction of small wind energy systems (up to 20 kW in residential zones and up to 100 kW in industrial, commercial, and public service zones). The new code is currently under public review.
- New, commercial-scale wind farms in the Kittitas County and the proposed county ordinance. Vantage Wind Power Project, located about 20 miles east-southeast of Ellensburg, is under construction. Sixty individual turbine sites are planned. Kittitas Valley Wind Power Project, by Horizon Wind Energy, plans a 48-turbine wind farm 12 miles northwest of Ellensburg. Desert Claim Wind Power Project, with 95 turbines, is planned by the enXco Corporation 8 miles northwest of Ellensburg (Daily Record News 2010). Completed in December 2006, the Wild Horse Wind Farm built by Puget Sound Energy consists of 149 turbines 15 miles east of Ellensburg. In response to the development of commercial-scale wind energy in Kittitas County, the County issued a Draft County Development Code, Chapter 17.61C, for Community Energy Wind Generators in January 2010. The Code was revised in April 2010. The regulations set forth permit requirements for number of turbines per acreage, setbacks, height, visual appearance, noise, safety, wildlife protection, and decommissioning. The regulations are currently under public review.

4.2 Summary of Cumulative Impacts

In this analysis of cumulative impacts, DOE evaluated potential impacts to the environmental resources and subject areas analyzed in detail in Section 3 of this EA. Impacts to other resources would be negligible or would not occur (Section 1.4). Therefore, it is unlikely that installation and operation of the solar and small wind energy systems, in combination with other past, present, or reasonably foreseeable actions, would have more than a negligible incremental impact on those aspects of the environment, and they are not further discussed here. DOE considers cumulative impacts to be minimal for this project since future expansion of energy-generating systems within the City of Ellensburg's Renewable Energy Park would be constrained to this same location, thereby reducing the haphazard spread of solar energy systems and wind turbine systems throughout the greater Ellensburg area.

4.2.1 AIR QUALITY

Ongoing and planned construction activities would cause emissions of particulate matter and other pollutants in the Renewable Energy Park area. However, emissions from each construction project individually would be temporary and projects are not likely to overlap for extended durations. Installation of the solar and small wind energy systems would have a very small incremental adverse impact for the few weeks that heavy equipment would be required.

Operation of the solar and small wind energy systems would contribute to the region's independence from fossil fuel for energy, which would contribute to the beneficial cumulative impact on air quality by reducing carbon dioxide emissions.

4.2.2 NOISE

Construction and operation of the solar and small wind energy systems at the City of Ellensburg's Renewable Energy Park would add to the cumulative noise generated with the construction and operation of the reasonably foreseeable projects listed in Section 4.1. However, the contribution of the City of Ellensburg's Renewable Energy Park to noise in the area would be very minor in comparison with the much larger construction of the floodplain restoration project and of the two industrial parks and the associated increase in traffic these parks would generate. The dominant noise in the area is likely to continue to be traffic on I-90.

4.2.3 AESTHETICS AND VISUAL RESOURCES

The proposed project would change the aesthetics of the project site with the addition of solar and small wind systems. When combined with the proposed industrial parks on the adjacent lands, there would be a cumulative impact to aesthetics from conversion of vacant land to developed uses. However, the Renewable Energy Park is only 3 acres, a very small part of this area.

The addition of eight wind-generating towers 40 to 100 feet in height at the City of Ellensburg's Renewable Energy Park would add to the cumulative adverse impact to the aesthetics of the general area, considering that small wind energy systems are being installed by individuals and businesses within the City of Ellensburg. However, the development of the wind energy at the Renewable Energy Park would also allow the city greater control of renewable energy systems by locating them in a central location. Both the City and the County have recognized the need for regulations to control the appearance, noise, height, setbacks, and impacts to wildlife among other factors. Thus, the incremental impact of the proposed project to the aesthetics of the area would be minimized by following the proposed regulations.

In addition, specifically in the area of the Renewable Energy Park, the height of the wind towers would also add to the cumulative adverse impact to aesthetics when combined with the new lighting structures planned for the adjacent ball fields. The lighting structures would be 60- to 70-feet tall and therefore comparable in height to the wind towers.

4.2.4 GEOLOGY AND SOILS

Because only a small amount of soil would be disturbed for the proposed project, this project would contribute very little to the cumulative effects of soil disturbance generated from the construction of the reasonably foreseeable projects listed in Section 4.1.

4.2.5 WATER RESOURCES

Because there would be little to no potential for adverse impacts to area surface water and groundwater as a result of the proposed project, this project would not contribute to the cumulative impact on water resources resulting from reasonably foreseeable actions described in Section 4.1. The new solar and small wind energy systems would be located within the 100-year floodplain of Reecer Creek. Although the Reecer Creek Floodplain Restoration Project is not expected to change the floodplain designation of the area, the Restoration Project would enhance Reecer Creek and improve flood control of the area.

4.2.6 BIOLOGICAL RESOURCES

Construction and operation of the new solar and small wind energy systems at the City of Ellensburg's Renewable Energy Park would add to the cumulative adverse impacts to biological resources when considered with the reasonably foreseeable projects listed in Section 4.1. However, the contribution of the City of Ellensburg's Renewable Energy Park to the adverse impacts of biological resources would be very minor in comparison with the much larger commercial-scale wind turbines planned elsewhere in Kittitas County. The proposed City and County ordinances would implement regulations that would minimize impacts to biological resources, especially birds. Battelle's project would be in compliance with the proposed regulations.

Approximately 3 acres of previously disturbed marginal habitat for plants and animals would be impacted from the proposed action. The contribution of the project to adverse impacts to habitat disturbance and alteration would be minimal compared with the construction of the industrial parks and large wind farms near the Renewable Energy Park. Restoration of the Reecer Creek floodplain would provide positive impacts to both wildlife and habitat, and would provide a continual wildlife corridor (Reecer Creek) just north of the Ellensburg Renewable Energy Park to maintain the connection of upland disturbed habitat with the Yakima River wetland habitats.

4.2.7 CULTURAL RESOURCES

Because construction of the new solar and small wind energy systems at the City of Ellensburg's Renewable Energy Park would not impact cultural resources, the proposed project would not contribute to the cumulative adverse impacts to cultural resources when considered with the reasonably foreseeable projects listed in Section 4.1.

5. CONCLUSIONS

DOE's proposed action would provide Battelle with \$600,000 in financial assistance in a cost-sharing arrangement to facilitate the expansion of solar generation and the addition of wind generating capacity at the City of Ellensburg's Renewable Energy Park. Battelle would purchase and install 540 solar panels, 10 solar concentrating modules, and 8 small wind turbines to make renewable energy generation accessible to the citizens of Ellensburg. The proposed project would generate up to an additional 85 kW in solar energy and 80 kW of wind energy. DOE concludes the following about the potential environmental impacts of its proposed action and Battelle's proposed project.

- Installation and operation of the proposed solar panels, solar concentrating modules, small wind energy systems, and other equipment would not have any meaningful or detectable impacts on land use; socioeconomics; environmental justice; cultural resources; occupational health and safety; transportation and traffic; utilities, energy, and materials; and waste.
- The new solar and small wind energy systems would not generate criteria pollutants or carbon dioxide. Because the proposed project is located in Kittitas County, Washington, an area that has been designated as in attainment for all criteria pollutants, the proposed project would meet the conformity requirements of the *Clean Air Act*.
- The proposed project would produce a quantity of electricity via solar and wind energy, which would reduce the amount produced from burning fossil fuels via conventional electricity generation. Therefore, the proposed project could slightly reduce regional greenhouse gas emissions.
- Operation of the solar concentrating modules and small wind energy systems would cause a negligible increase in sound levels outdoors. Moreover, the solar concentrating modules and wind turbines would not be heard at the nearest residences, about 0.5 mile away, and because the proposed project is adjacent to I-90, traffic noise would remain the dominant noise in the area. Operation of the concentrating solar units would be in compliance with all City of Ellensburg ordinances including the Noise Ordinance.
- The aesthetics of the area would change with the addition of ten 18-foot-diameter solar concentrating modules and eight wind-generating towers 40 to 100 feet in height at the City of Ellensburg's Renewable Energy Park. The aesthetic impact of the Renewable Energy Park could be viewed negatively by some individuals. However, the use of wind, and associated wind towers, as a source of renewable energy is increasing in Ellensburg and Kittitas County. In addition, the City of Ellensburg encourages utility customers to install their own renewable energy systems such as solar photovoltaic panels and small wind turbines. The proposed small wind systems would be in compliance with the City's

and County's forthcoming regulations for wind turbines. Adverse impacts to visual resources are not expected.

- Only a minor amount of soil would be disturbed by excavations for the proposed project. No impacts to soils, geology, surface water, and groundwater are expected.
- There would be no adverse impacts on the natural and beneficial floodplain values associated with Reecer Creek, and no increase in risk to lives or property in the area from installing the new solar and small wind energy systems in the 100-year floodplain.
- Developing 3 acres for further construction of the City of Ellensburg's Renewable Energy Park would not significantly impact any plant or animal species because the project site is small and isolated from larger tracts of undisturbed land, and because plant and animal species found there are common and widespread in the region. The proposed project would have no effect on species protected under the federal *Endangered Species Act*, and no State-protected species are expected to be found on the site. No impacts to wetlands are expected to occur since wetlands are not located on or immediately adjacent to the project site and project activities do not have the potential to impact offsite wetlands. Risk of collisions with the small wind turbines by migratory birds and bats is minimal due to the configuration of the turbines (parallel to bird movements towards the wetlands and grouped configuration) and placement in previously disturbed habitat (Erickson 2008). To reduce the potential for nesting and perching of migratory birds, Battelle would assure that the City of Ellensburg follows the guidelines set forth by the U.S. Fish and Wildlife Service; that is, external ladder and platforms would not be used on tubular towers, and guy wires would be marked with bird deterrent devices (Erickson 2008). Limiting the use of lattice-type towers could also reduce the potential for bird nesting and perching.
- DOE has determined that Battelle's proposed project does not have the potential to impact cultural resources or historic properties. DOE has consulted with and obtained concurrence from the Washington State Historic Preservation Officer regarding this determination.
- Relative to the cumulative changes in the environment that would be caused by the proposed project in combination with other planned activities nearby, the installation and operation of the solar and small wind energy systems at the City of Ellensburg's Renewable Energy Park would cause small, adverse incremental changes to aesthetics and visual resources. The proposed project would result in a small, beneficial, incremental impact to the region's air quality by reducing carbon dioxide emissions.
- Under the No-Action Alternative, DOE would not provide funding to Battelle and, for purposes of this EA, assumes that the wind systems would not be installed and operated.

No impacts to the existing environment would occur, and beneficial impacts of the proposed project would not be realized.

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APPENDIX A
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Olympia, WA 98501

Washington Department of Ecology
SEPA Unit
P.O. Box 47703
Olympia, WA 98504-7703

Jason Smith, Environmental Manager
Washington Department of Transportation
South Central Regional Office
P.O. Box 12560
Yakima, WA 98909

Mike Smith
SEPA Responsible Official
City of Ellensburg
501 N Anderson St
Ellensburg, WA 98926

Audubon Washington
Seward Park Audubon Center
5902 Lake Washington Blvd S
Seattle, WA 98118

Kittitas Audubon Society
Tom Gauron, President
P.O. Box 1443
Ellensburg, WA 98926

Ted Barkley, City Manager
City of Ellensburg
501 N Anderson St
Ellensburg, WA 98926

Kirk Holmes
Community Development Director
Kittitas County
411 N Ruby St, Suite 2
Ellensburg, WA 98926

Robert G. Whitlam, Ph.D.,
State Archaeologist
Department of Archaeology & Historic
Preservation
1063 South Capitol Way, Suite 106
Olympia, WA 98501

Federal Offices

Jessica Gonzales, Assistant Project Leader
U.S. Fish and Wildlife Service
Central Washington Field Office
215 Melody Lane, # 119
Wenatchee, WA 98801

Kathryn Vernon, Northwest Mountain
Regional Administrator
Federal Aviation Administration
Northwest Mountain Region
1601 Lind Avenue Southwest
Renton, WA 98057

Phil Wallis, Vice President
National Audubon Society
1201 Pawlings Road
Audubon, PA 19403

Michelle P. Scott, General Counsel
National Audubon Society
225 Varick Street, 7th floor
New York, NY 10014

Kim Van Fleet
Important Bird Area Coordinator and Staff
Biologist
National Audubon Society
100 Wildwood Way
Harrisburg, PA 17110

Mr. Kevin Haggerty
U.S. Department of Energy
Freedom of Information Act Reading Room
1000 Independence Avenue, SW, 1G-033
Washington, DC 20585

American Indian Tribes

Confederated Tribes of the Colville
Reservation
Mike Marchand, Chairman
P.O. Box 150
Nespelem, WA 99155-0150

Confederated Tribes and Bands of the
Yakama Indian Nation
Lavina Washines, Chairwoman
P.O. Box 151
Toppenish, WA 98948-0151

Other

Eric Glitzenstein
Meyer Glitzenstein & Crystal 1601
Connecticut Ave., N.W., Suite 700
Washington, D.C. 20009-1056

William Eubanks
Meyer Glitzenstein & Crystal 1601
Connecticut Ave., N.W., Suite 700
Washington, D.C. 20009-1056

APPENDIX B
CONSULTATIONS

This appendix contains copies of consultation letters sent by DOE to fulfill its responsibilities under the *Endangered Species Act* and *National Historic Preservation Act*.



NATIONAL ENERGY TECHNOLOGY LABORATORY
5700 13th Avenue, MS-707, Pittsburgh, PA 15245



April 28, 2010

Greg Griffith, Comprehensive Planning Specialist
Department of Archeology & Historic Preservation
1063 South Capital Way, Suite 106
Olympia, WA 98501

RE: U.S. Department of Energy Request for Consultation for the Proposed Installation of Small Wind Systems at the City of Ellensburg's Renewable Energy Park, Kittitas County, State of Washington

Dear Mr. Griffith:

The U.S. Department of Energy (DOE) is proposing to provide a financial assistance grant to Battelle Memorial Institute (Battelle), as part of the Smart Grid Demonstration Program, funded through the *American Recovery and Reinvestment Act of 2009* (Recovery Act). If funded Battelle, in conjunction with the City of Ellensburg, would expand the installed capacity of solar energy generation and add wind capacity through the installation of small wind systems at the City of Ellensburg's Renewable Energy Park located in Ellensburg, Kittitas County, Washington. The Renewable Energy Park and the proposed project site is located in the SE/4 of Section 3, Township 17 North, Range 18 E as shown on the United States Geological Survey Ellensburg South quadrangle map. Attachment 1 shows the location of the proposed project site. The proposed project site is about 150 feet south of Reece Creek and is located within the 100 year floodplain of the creek. In the past, the land has been used for grazing. Currently the land is owned by the City of Ellensburg and is used for the existing Renewable Energy Park, containing only solar panels.

The proposed project would provide valuable information on different solar and wind technologies. This project would include installation of an additional 50 to 85 kilowatts of solar panels and 50 to 70 kilowatts of small wind turbine systems (8 turbines with 40 to 100 foot towers) in a 3-acre area, with associated underground wiring and communication lines. Attachment 2 shows the proposed site plan.

Based on currently available information, DOE believes the project would not cause any effects to historic or archeological at the project site in Ellensburg, Washington for the following reasons: (1) the site is vacant land (with the exception of existing solar panels) formerly used for agricultural purposes; and (2) there are no known historical structures or foundations on the site. For the proposed project described above, the expansion of solar energy generation will be categorically excluded from environmental analysis under the *National Environmental Policy Act* (NEPA). However, the installation of small wind systems is not excluded, therefore an environmental assessment (EA) is currently being prepared for the proposed wind turbines by the Department's National Energy Technology Laboratory to meet the requirements of the *National Environmental Policy Act*.

3510 Collins Ferry Road, P.O. Box 830, Morgantown, WV 26507

As part of our public interest review and disclosure in this EA, to meet DOE's obligations under Section 106 of the *National Historic Preservation Act* DOE is requesting any additional information your office has on historic properties that might occur within 1 mile of the proposed project site and any comments or concerns you have on the potential for this proposed project to affect those properties.

If you have any such information, require additional information, clarification, or have any questions or comments about that project, please contact Mr. Fred Pozzuto, Environmental Manager/NEPA Compliance Officer of the National Energy Technology Laboratory as soon as possible at the following:

Mr. Fred Pozzuto
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road
Bldg. 1, MS B07
Morgantown, WV 26507-0880
Telephone: (304) 285-5219
Email: Fred.Pozzuto@netl.doe.gov
Fax: (304) 285-4403

DOE will include correspondence with your office in an appendix to the EA. Upon completion of the draft EA, DOE will be sending a copy to your office, where you may again respond to any specific concerns you may have. At this time, we anticipate circulation of the draft EA in mid-May 2010 with a 15-day public comment period for this proposed project.

Since this is a Recovery Act project, we would appreciate a quick response to our request for consultation. Thank you in advance for your consideration.

Respectfully,



Fred Pozzuto
Environmental Manager \ NEPA Compliance Officer

Attachment 1 - Figure 1, Proposed project location
Attachment 2 - Figure 2, Proposed site plan
Attachment 3 - Historic & Cultural Resources Review Sheet(s) EZ1

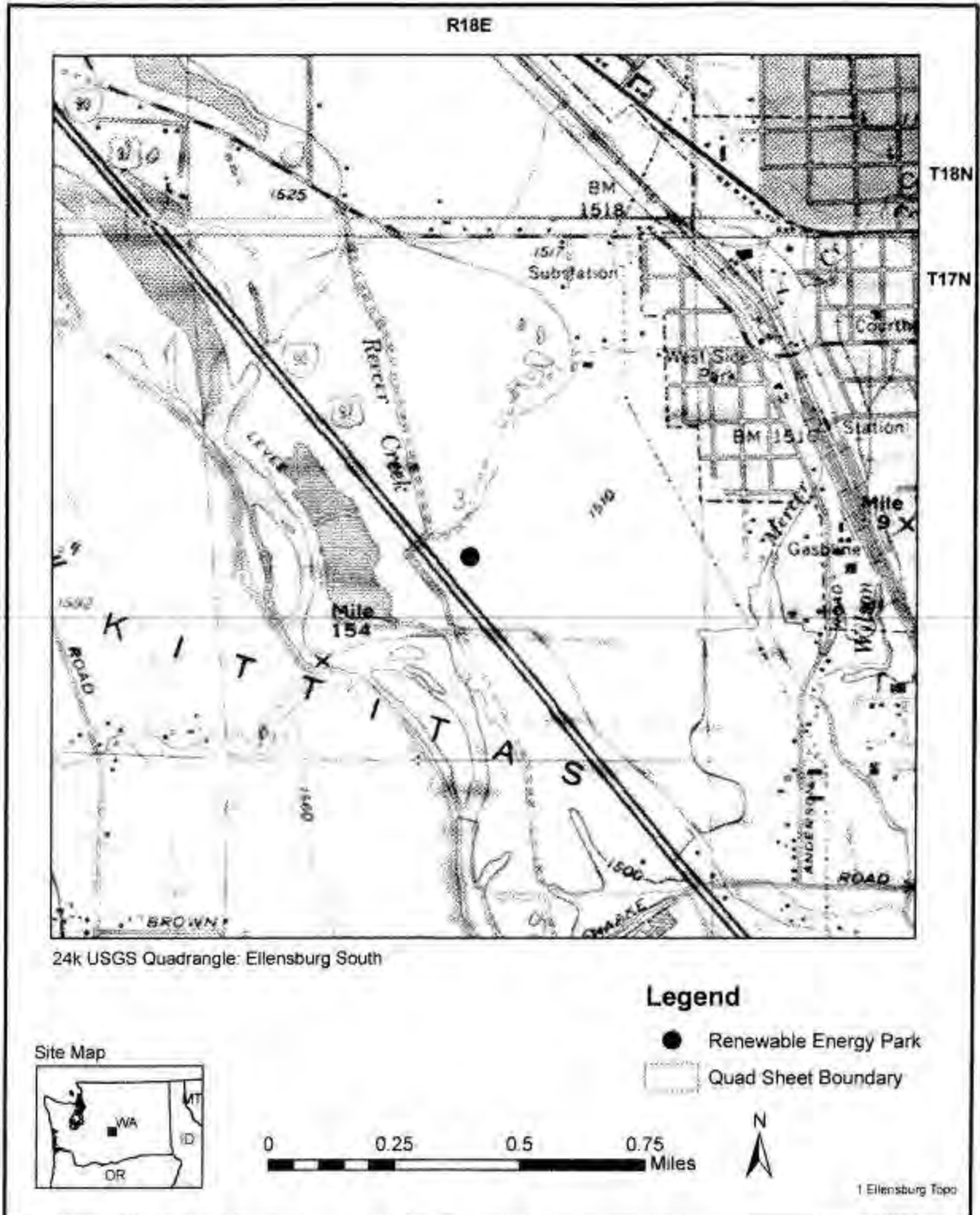


Figure 1. Proposed project location.

PROJECT REVIEW SHEET – EZ1

HISTORIC & CULTURAL RESOURCES REVIEW

PROPERTY / CLIENT NAME: Battelle/City of Ellensburg

FUNDING AGENCY: U.S. Department of Energy

Project Applicant:	<u>U.S. Department of Energy National Energy Technology Laboratory</u>		
Contact Person:	<u>Fred Pozzuto</u>		
Address:	<u>3610 Collins Ferry Road; Bldg. 1, MS B07</u>		
City, State:	<u>Morgantown, WV</u>	Zip: <u>26507-0880</u>	County: _____
Phone/ FAX:	<u>(304) 285-5219/ (304) 285-4403</u>		
E-Mail:	<u>Fred.Pozzuto@netl.doe.gov</u>		

Funding Agency:

Organization: Same as above
 Address: _____
 City, State: _____ Zip: _____
 Phone: _____

PLEASE DESCRIBE THE TYPE OF WORK TO BE COMPLETED

(Be as detailed as possible to avoid having to provide additional information)

Provide a detailed description of the proposed project:

The U.S. Department of Energy (DOE) is proposing to provide a financial assistance grant to Battelle Memorial Institute (Battelle), as part of the Smart Grid Demonstration Program, funded through the American Recovery and Reinvestment Act of 2009 (Recovery Act). If funded, Battelle, in conjunction with the City of Ellensburg, would expand the installed capacity of solar energy generation and add wind capacity through the installation of small wind systems at the City of Ellensburg's Renewable Energy Park located in Ellensburg, Kittitas County, Washington. The proposed project would provide valuable information on different solar and wind technologies. This project would include installation of 50 to 85 kilowatts of solar panels and 50 to 70 kilowatts of small wind systems (eight 40- to 100-foot towers) in a 3-acre area, with associated underground wiring and communication lines. The individual components to be installed for this project are comparable in size to what a customer might install on their home or business.

Describe the existing project site conditions:

The proposed project site is about 150 feet south of Reecer Creek and is located within the 100-year floodplain of the creek. In the past, the land had been used for grazing. Currently the land is owned by the City of Ellensburg and is used for the existing Renewable Energy Park. There are 10 rows of solar panels, with a total of 372 solar panels.

Describe the proposed ground disturbing activities:

Ground would be broken for installation of solar panels and eight small wind systems and for installation of underground wiring and communication lines. Concrete pads 5 to 10 feet deep would be needed for installation of the small wind systems. The dirt access road that currently exists would be paved.

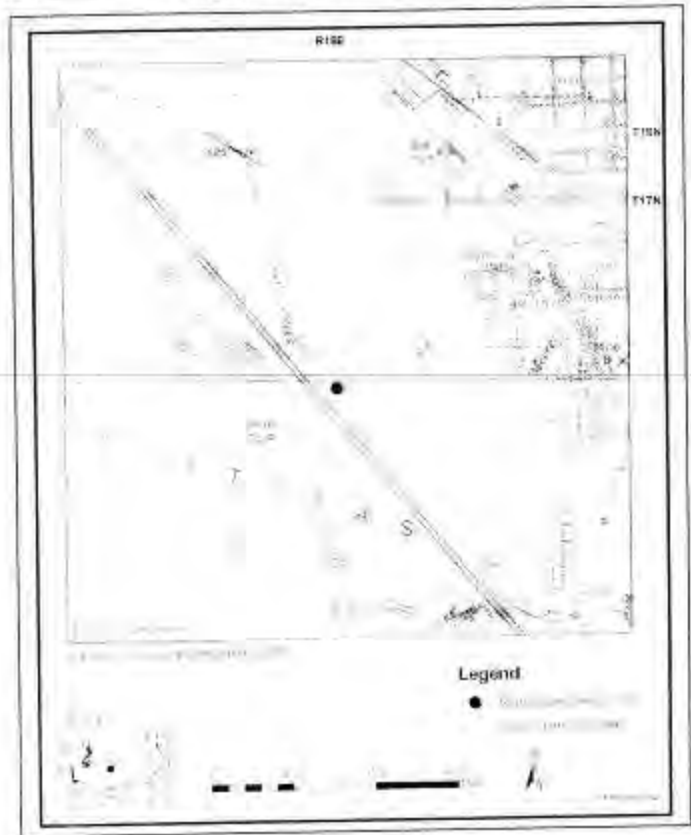
Check if building(s) will be altered or demolished. If so please complete a DAHP Determination of Eligibility "E22" form for each building effected by the proposed project.

**PLEASE ATTACH A COPY OF THE RELEVANT PORTION OF A 7.5 SERIES
USGS QUAD MAP AND OUTLINE THE PROJECT IMPACT AREA.**
USGS Quad maps are available on-line at <http://maptech.mytopo.com/onlinemaps/index.cfm>

Project Location

Township: 17N
Address: _____

Range: 18E Section: SE/4 Section 3
City: Ellensburg County: Kittitas



Mail this form to:

Department of Archaeology and Historic Preservation or E-mail to:
1063 S. Capitol Way, Suite 106
P.O. Box 48343
Olympia, WA 98504-8343

Robert Whillam, Ph.D.
State Archaeologist, DAHP
(360) 586-3080
whillamr@dahp.wa.gov

(Within 30 days DAHP will mail their opinion back to you)



NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA



May 3, 2010

Jessica Gonzales, Assistant Project Leader
USFWS, Central Washington Field Office
215 Melody Lane, # 119
Wenatchee, WA 98801

RE: U.S. Department of Energy Request for Consultation for the Proposed Installation of Small Wind Systems at the City of Ellensburg's Renewable Energy Park, Kittitas County, State of Washington

Dear Ms. Gonzales:

The U.S. Department of Energy (DOE) is proposing to provide a financial assistance grant to Battelle Memorial Institute (Battelle), as part of the Smart Grid Demonstration Program, funded through the *American Recovery and Reinvestment Act of 2009* (Recovery Act). If funded, Battelle, in conjunction with the City of Ellensburg, would expand the installed capacity of solar energy generation and add wind capacity through the installation of small wind systems at the City of Ellensburg's Renewable Energy Park located in Ellensburg, Kittitas County, Washington. The Renewable Energy Park and the proposed project site are located in the SE/4 of Section 3, Township 17 North, Range 18 E as shown on the United States Geological Survey Ellensburg South quadrangle map. Attachment 1 shows the location of the proposed project site. The proposed project site is about 150 feet south of Reecer Creek and is located within the 100-year floodplain of the creek. In the past, the land had been used for grazing. Currently the land is owned by the City of Ellensburg and is used for the existing Renewable Energy Park, containing only solar panels.

The proposed project would provide valuable information on different solar and wind technologies. This project would include installation of an additional 50 to 85 kilowatts of solar panels and 50 to 70 kilowatts of small wind turbine systems (8 turbines with 40 to 100 foot towers) in a 3-acre area, with associated underground wiring and communication lines. Attachment 2 shows the proposed site plan.

As part of our obligation when providing funding for a proposed project, DOE is required under Section 7 of the *Endangered Species Act* to use its authority to ensure actions are approved, funded, or carried out that will avoid impacts to both flora and fauna that are considered threatened or endangered species, or proposed for listing as threatened or endangered species, on the proposed project site. For the proposed project described above, the expansion of solar energy generation is categorically excluded from environmental analysis under the *National Environmental Policy Act* (NEPA). However, the installation of small wind systems is not excluded, and DOE's National Energy Technology Laboratory is preparing an environmental assessment to meet NEPA requirements.

Listed species: DOE accessed the USFWS State of Washington website (<http://www.fws.gov/wafwa/>) to determine if any federally listed species occur in the vicinity of the project location. Per the directions on the website, the downloaded species list is attached (Attachment 3) to document DOE's compliance with 50 CFR 402.12 (c). The list was downloaded on April 12, 2010.

One plant species, 1 fish, 3 mammal, and 2 avian species are federally listed in Kittitas County (Attachment 3). Due to the site's past use for grazing and currently as a renewable energy park, habitat is not

3810 Collins Ferry Road, P.O. Box 800, Morgantown, WV 26507

available to support the large carnivore species or the listed plant species. The boundary of the proposed project site is about 150 feet from Reecer Creek, which could potentially support bull trout; however, the creek is not listed as part of the proposed critical habitat for the Yakima River Unit nor is it located near the main critical spawning areas within the Okanogan-Wenatchee National Forest Wilderness. Forested habitat to support both the marbled murrelet and spotted owl nesting habitat does not occur within the proposed project site, and critical habitat for the spotted owl does not occur near the proposed project site. Based on site development recommendations from the USFWS "Interim guidelines to avoid and minimize wildlife impacts from wind turbines" impacts to wildlife species are not expected due to: (1) limited concentration of birds in the area (roosting, migration route); (2) absence of bat roosting or maternal colonies; (3) absence of geological features attractive to wildlife; (4) grouped turbine spatial configuration; (5) already altered land and existing infrastructure; and (6) absence of prairie grouse or other species that exhibit extreme avoidance of vertical features.

Conclusion: DOE concludes that providing financial assistance for the expansion of the installed capacity of solar energy generation and addition of wind capacity through the installation of small wind systems at the City of Ellensburg's Renewable Energy Park located in Ellensburg, Washington, would have no effect on federally listed species since sensitive species are not present in the immediate project area.

DOE will include correspondence with your office in an appendix to the EA. Upon completion of the draft EA, DOE will be sending a copy to your office, where you may again respond to any specific concerns you may have. At this time, we anticipate circulation of the Draft EA in mid-May 2010 with a 15-day public comment period for this proposed project.

Please forward the results of your review and any requests for additional information to the DOE's National Energy Technology Laboratory using the contact information provided below:

Mr. Fred Pozzuto
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road
Bldg. 1, MS B07
Morgantown, WV 26507-0880
Telephone: (304) 285-5219
Fax: (304) 285-4403
Email: Fred.Pozzuto@netl.doe.gov

Because this is a Recovery Act project, we would appreciate a quick response to our request for consultation. If you have any questions or require clarification, please contact me as noted above. Thank you in advance for your consideration.

Sincerely



Fred Pozzuto
Environmental Manager / NEPA Compliance Officer

Attachments

Attachment 1 - Figure 1. Proposed project location

Attachment 2 – Figure 2. Proposed site plan

Attachment 3 – Federally listed species in Kinitas County, Washington

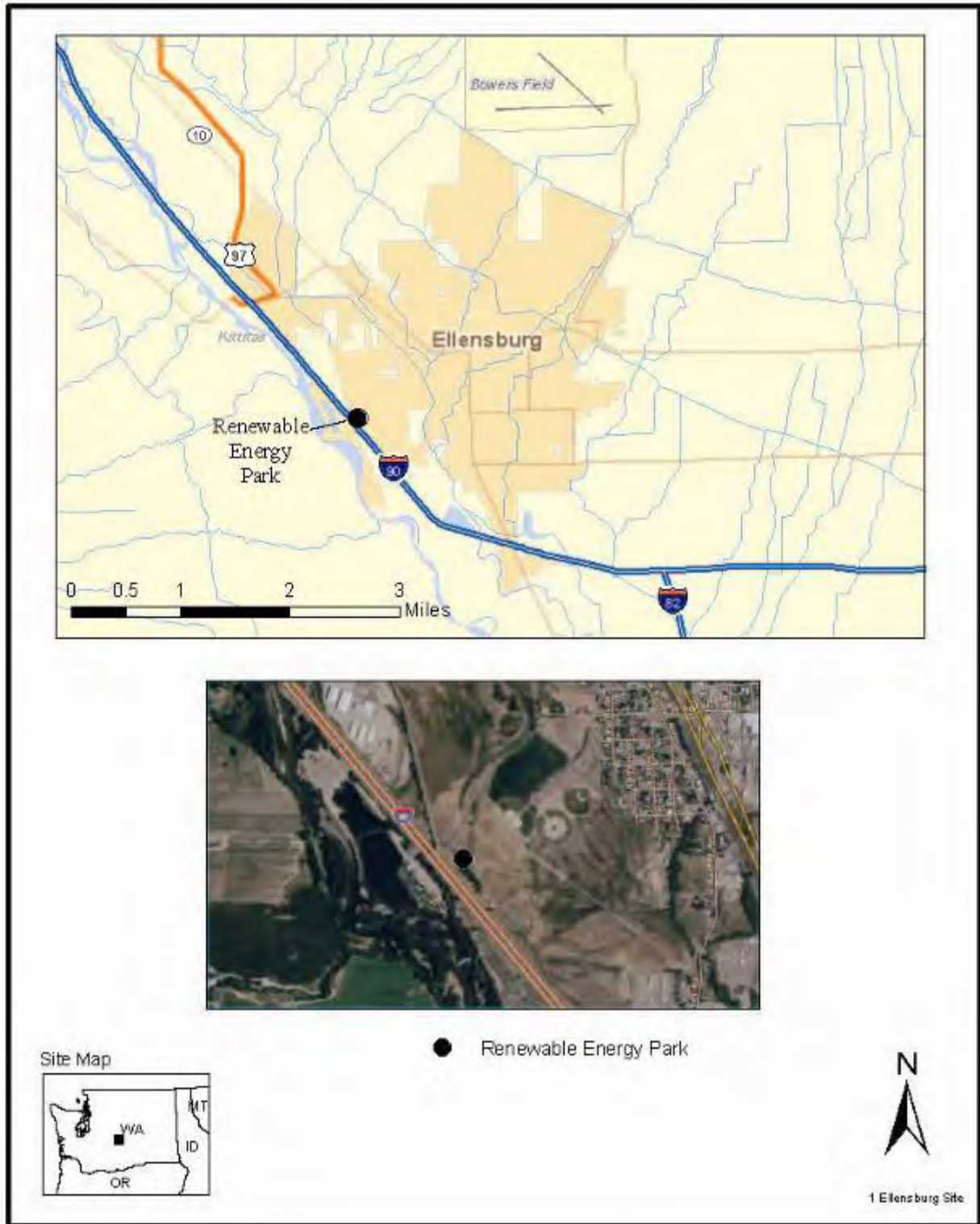


Figure 1. Site location.

Washington Fish and Wildlife Office - Species Map

U.S. Fish & Wildlife Service
Washington Fish and Wildlife Office
Pacific Region

Home What We Do Programs Newsroom What You Can Do

Contact Us

Species by County - Eastern Washington

County Name	County Name
Adams	Kittitas
Asotin	Klickitat
Benton	Lincoln
Chelan	Okanogan
Columbia	Pend Oreille
Douglas	Spokane
Ferry	Stevens
Franklin	Walla Walla
Garfield	Whitman
Grant	Yakima

Eastern Washington
(Spokane)

Central Washington
(Wenatchee)

http://www.fws.gov/wafwo/species_EW.html[4/12/2010 10:06:45 AM]

Appendix B

Washington Fish and Wildlife Office - Species Map



Last updated: April 8, 2010

[Washington Fish and Wildlife Office](#)
[Pacific Region Home](#)

[U.S. Fish and Wildlife Service Home Page](#) | [Department of the Interior](#) | [USA.gov](#) |
[About the U.S. Fish and Wildlife Service](#) | [Accessibility](#) | [Privacy](#) | [Notices](#) | [Disclaimer](#) | [FOIA](#)



http://www.fws.gov/wafwo/species_EW.html[4/12/2010 10:06:45 AM]

KITITAS COUNTY
Updated 7/24/2008

LISTED

Endangered

Gray wolf (*Canis lupus*)

Threatened

Bull trout (*Salvelinus confluentus*) – Columbia River distinct population segment
Grizzly bear (*Ursus arctos horribilis*)
Canada lynx (*Lynx canadensis*)
Marbled murrelet (*Brachyramphus marmoratus*)
Northern spotted owl (*Strix occidentalis caurina*)
Spiranthes diluvialis (Ute ladies'-tresses), plant

Designated

Critical habitat for the northern spotted owl
Critical habitat for the Columbia River distinct population segment of the bull trout

CANDIDATE

Fisher (*Martes pennanti*) - West Coast distinct population segment
Greater sage grouse (*Centrocercus urophasianus*) - Columbia Basin distinct population segment
Yellow-billed cuckoo (*Coccyzus americanus*)

SPECIES OF CONCERN

Animals

Bald eagle (*Haliaeetus leucocephalus*) (delisted, monitor status)
Black swift (*Cypseloides niger*)
Burrowing owl (*Athene cunicularia*)
Ferruginous hawk (*Buteo regalis*)
Larch Mountain salamander (*Plethodon larselli*)
Loggerhead shrike (*Lanius ludovicianus*)
Long-eared myotis (*Myotis evotis*)
Northern goshawk (*Accipiter gentilis*)
Olive-sided flycatcher (*Contopus cooperi*)
Pacific lamprey (*Lampetra tridentata*)
Pallid Townsend's big-eared bat (*Corynorhinus townsendii pallescens*)
Peregrine falcon (*Falco peregrinus*) (Delisted, monitor status)

Pygmy whitefish (*Prosopium coulteri*)
Redband trout (*Oncorhynchus mykiss*)
River lamprey (*Lampetra ayresi*)
Sagebrush lizard (*Sceloporus graciosus*)
Sharptail snake (*Contia tentus*)
Townsend's ground squirrel (*Spermophilus townsendii*)
Western brook lamprey (*Lampetra richardsoni*)
Western gray squirrel (*Sciurus griseus griseus*)
Westslope cutthroat trout (*Oncorhynchus clarki lewisi*)
Wolverine (*Gulo gulo*)

Vascular Plants

Astragalus columbianus (Columbia milk-vetch)
Cypripedium fasciculatum (Clustered lady's-slipper)
Delphinium viridescens (Wenatchee larkspur)
Lomatium tuberosum (Hoover's desert-parsley)
Phacelia minutissima (Least phacelia)
Pinus albicaulis (Whitebark pine)
Silene seelyi (Seely's silene)
Tauschia hooveri (Hoover's tauschia)

Mosses

Orthotrichum praemorsum



NATIONAL ENERGY TECHNOLOGY LABORATORY
U.S. DEPARTMENT OF ENERGY



April 28, 2010

Confederated Tribes of the Colville Reservation
Mike Marchand, Chairman
P.O. Box 150
Nespelem, WA 99155-0150

RE: U.S. Department of Energy Request for Consultation for the Proposed Installation of Small Wind Systems at the City of Ellensburg's Renewable Energy Park, Kittitas County, State of Washington

Dear Mr. Marchand:

The U.S. Department of Energy (DOE) is proposing to provide a financial assistance grant to Battelle Memorial Institute (Battelle), as part of the Smart Grid Demonstration Program, funded through the *American Recovery and Reinvestment Act of 2009* (Recovery Act). If funded Battelle, in conjunction with the City of Ellensburg, would expand the installed capacity of solar energy generation and add wind capacity through the installation of small wind systems at the City of Ellensburg's Renewable Energy Park located in Ellensburg, Kittitas County, Washington. The Renewable Energy Park and the proposed project site is located in the SE/4 of Section 3, Township 17 North, Range 18 E as shown on the United States Geological Survey Ellensburg South quadrangle map. Attachment 1 shows the location of the proposed project site. The proposed project site is about 150 feet south of Reece Creek and is located within the 100 year floodplain of the creek. In the past, the land has been used for grazing. Currently the land is owned by the City of Ellensburg and is used for the existing Renewable Energy Park, containing only solar panels.

The proposed project would provide valuable information on different solar and wind technologies. This project would include installation of an additional 50 to 85 kilowatts of solar panels and 50 to 70 kilowatts of small wind turbine systems (8 turbines with 40 to 100 foot towers) in a 3-acre area, with associated underground wiring and communication lines. Attachment 2 shows the proposed site plan.

Based on currently available information, DOE believes the project would not cause any effects to tribal resources at the project site in Ellensburg, Washington for the following reasons: (1) the site is vacant land (with the exception of existing solar panels) formerly used for agricultural purposes; and (2) there are no known historical structures or foundations on the site. For the proposed project described above, the expansion of solar energy generation will be categorically excluded from environmental analysis under the *National Environmental Policy Act*; however, an environmental assessment (EA) is currently being prepared for the proposed wind turbines by the Department's National Energy Technology Laboratory to meet the requirements of the *National Environmental Policy Act*.

3810 Collins Ferry Road, P.O. Box 880, Morgantown, WV 26507

As part of our public interest review and disclosure, DOE is initiating consultation and requesting information your tribe may have on properties of traditional religious and cultural significance within the vicinity of this proposed Battelle facility and any comments or concerns you have on the potential for this proposed project to affect those properties.

This information is being requested to aid in the preparation of DOE's Environmental Assessment for this project and to meet our obligations under Section 106 of the National Historic Preservation Act and the Native American Graves Protection and Repatriation Act of 1990.

If you have any such information, require additional information, or have any questions or comments about that project, please contact Mr. Fred Pozzuto, Environmental Manager/NEPA Compliance Officer of the National Energy Technology Laboratory as soon as possible at the following:

Mr. Fred Pozzuto
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road
Bldg. 1, MS B07
Morgantown, WV 26507-0880
Telephone: (304) 285-5219
Email: Fred.Pozzuto@netl.doe.gov
Fax: (304) 285-4403

DOE will include correspondence with your office in an appendix to the EA. Upon completion of the draft EA, DOE will be sending a copy to your office where you may again respond to any specific concerns you may have. At this time, we anticipate circulation of the draft EA in mid-May 2010 with a 15-day public comment period for this proposed project.

Since this is a Recovery Act project, we would appreciate a quick response to our request for consultation. Thank you in advance for your consideration.

Respectfully,



Fred Pozzuto
Environmental Manager / NEPA Compliance Officer

Attachment 1 - Figure 1. Proposed project location
Attachment 2 - Figure 2. Proposed site plan

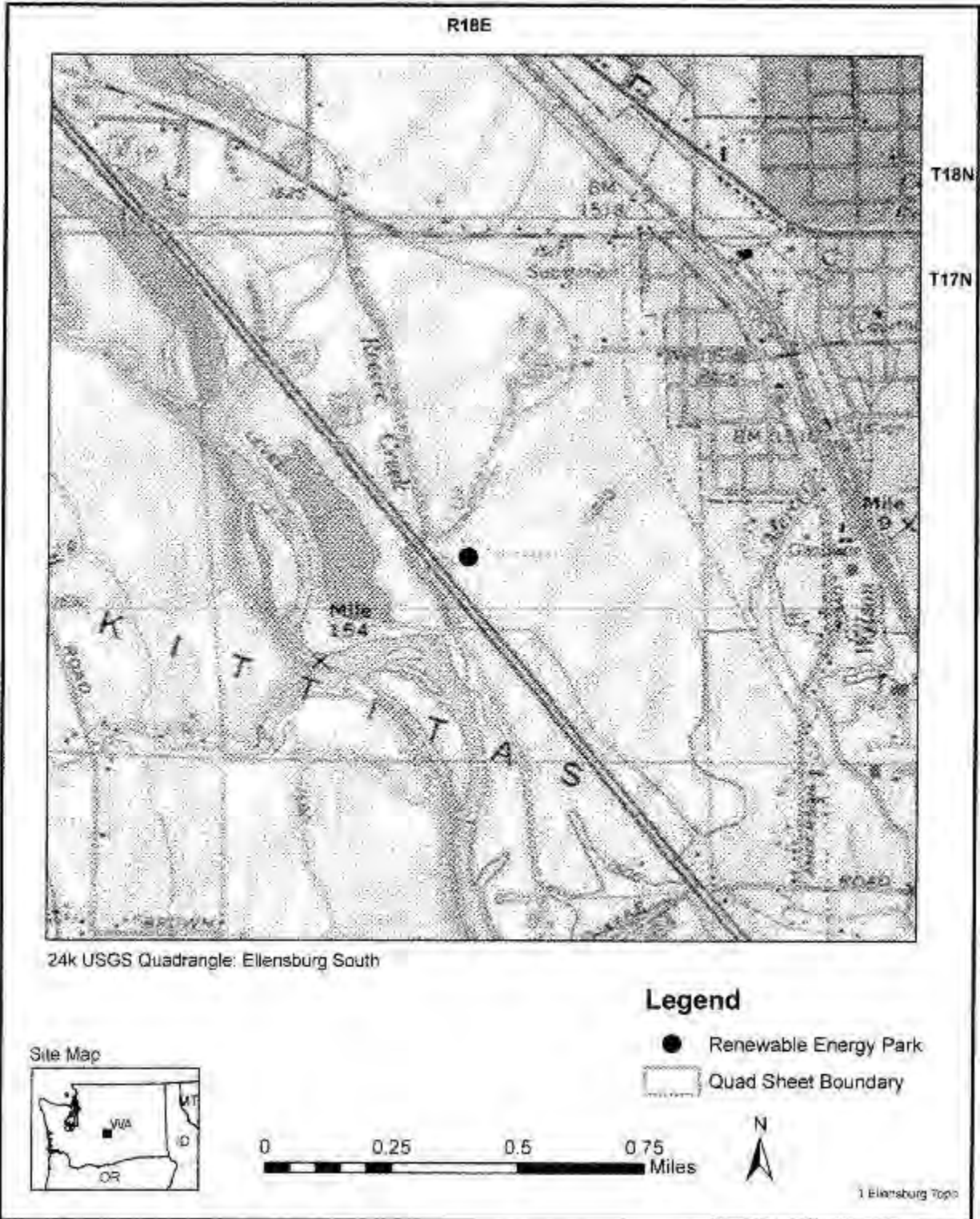


Figure 1. Proposed project location.

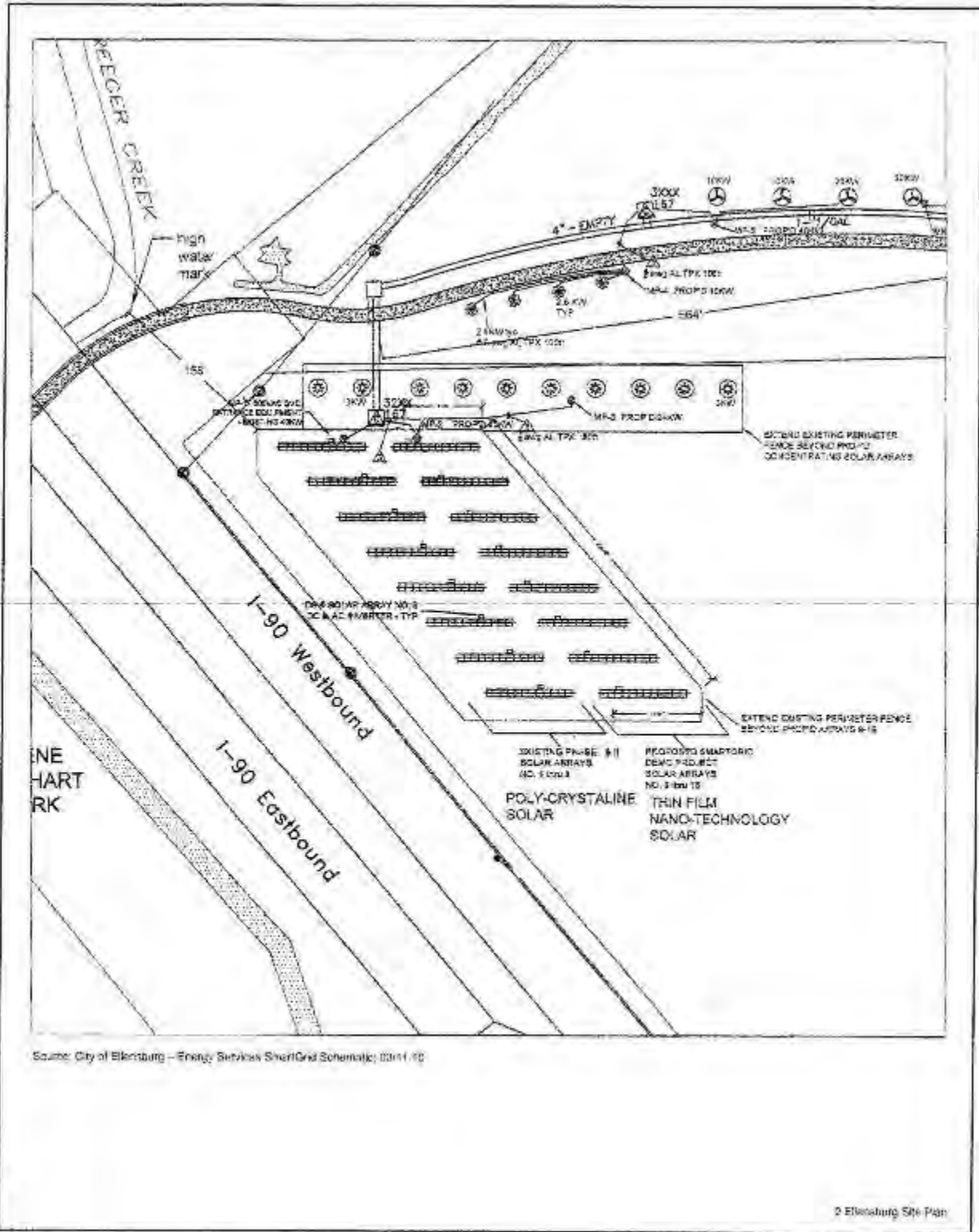


Figure 2. Proposed site plan.



NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA



April 28, 2010

Confederated Tribes and Bands of the Yakama Indian Nation
Lavina Washines, Chairwoman
P.O. Box 151
Toppenish, WA 98948-0151

RE: U.S. Department of Energy Request for Consultation for the Proposed Installation of Small Wind Systems at the City of Ellensburg's Renewable Energy Park, Kittitas County, State of Washington

Dear Ms. Washines:

The U.S. Department of Energy (DOE) is proposing to provide a financial assistance grant to Battelle Memorial Institute (Battelle), as part of the Smart Grid Demonstration Program, funded through the *American Recovery and Reinvestment Act of 2009* (Recovery Act). If funded, Battelle, in conjunction with the City of Ellensburg, would expand the installed capacity of solar energy generation and add wind capacity through the installation of small wind systems at the City of Ellensburg's Renewable Energy Park located in Ellensburg, Kittitas County, Washington. The Renewable Energy Park and the proposed project site is located in the SE/4 of Section 3, Township 17 North, Range 18 E as shown on the United States Geological Survey Ellensburg South quadrangle map. Attachment 1 shows the location of the proposed project site. The proposed project site is about 150 feet south of Reecer Creek and is located within the 100 year floodplain of the creek. In the past, the land has been used for grazing. Currently the land is owned by the City of Ellensburg and is used for the existing Renewable Energy Park, containing only solar panels.

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3610 Collins Ferry Road, P.O. Box 980, Morgantown, WV 26507

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If you have any such information, require additional information, clarification, or have any questions or comments about that project, please contact Mr. Fred Pozzuto, Environmental Manager/NEPA Compliance Officer of the National Energy Technology Laboratory as soon as possible at the following:

Mr. Fred Pozzuto
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road
Bldg. I, MS B07
Morgantown, WV 26507-0880
Telephone: (304) 285-5219
Email: Fred.Pozzuto@netl.doe.gov
Fax: (304) 285-4403

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Respectfully,



Fred Pozzuto
Environmental Manager / NEPA Compliance Officer

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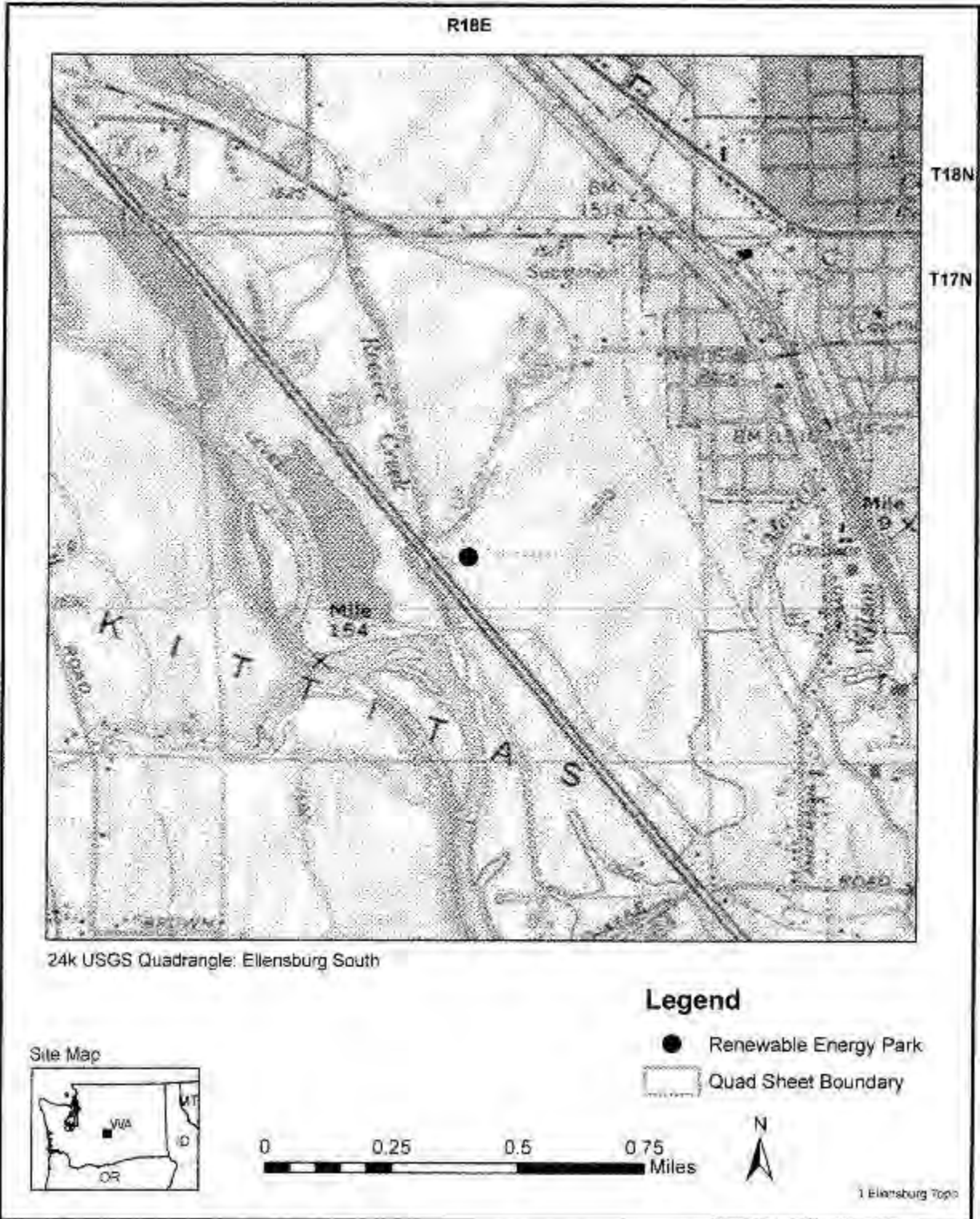


Figure 1. Proposed project location.

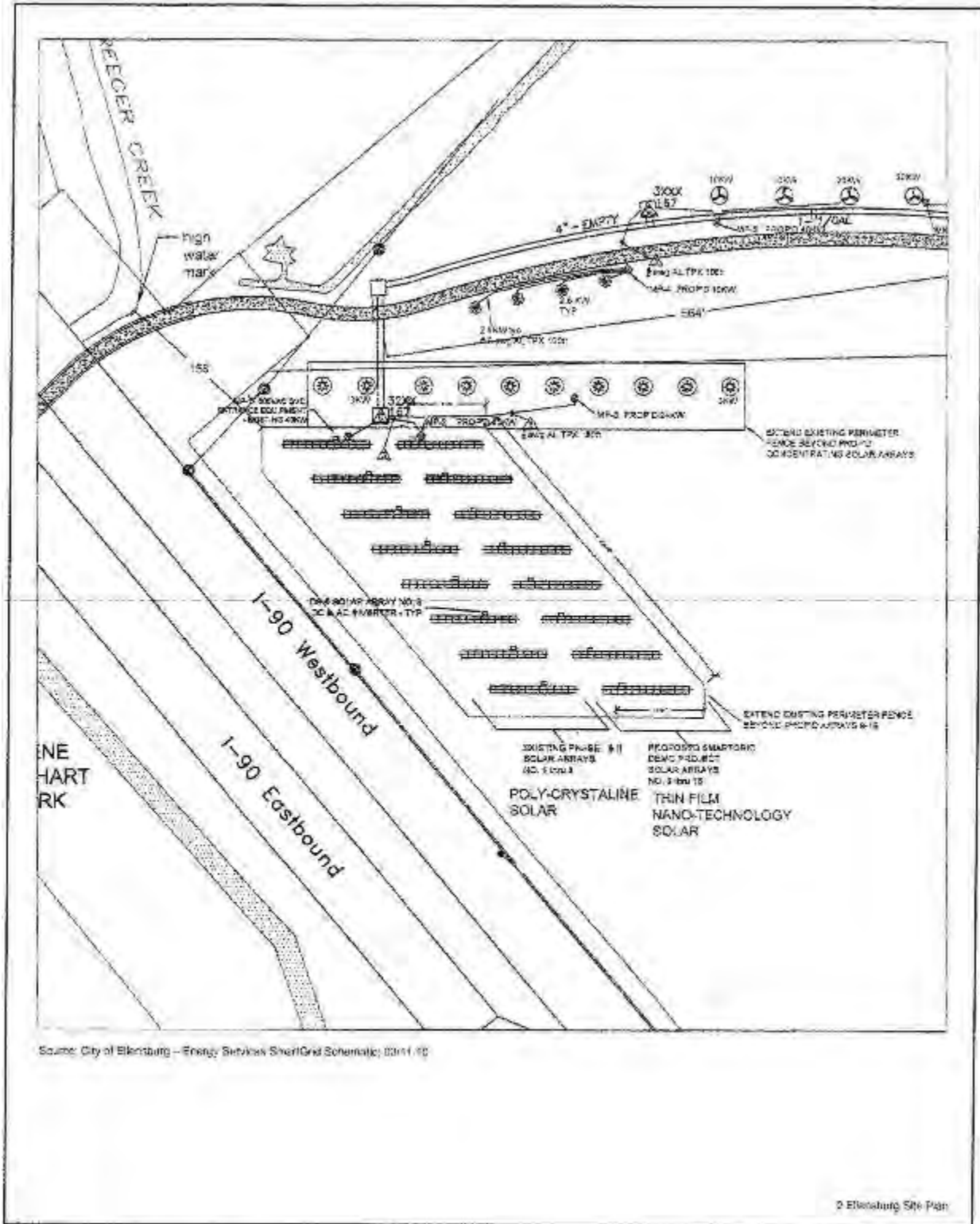


Figure 2. Proposed site plan.



STATE OF WASHINGTON

DEPARTMENT OF ARCHAEOLOGY & HISTORIC PRESERVATION

1063 S. Capitol Way, Suite 106 • Olympia, Washington 98501
Mailing address: PO Box 48343 • Olympia, Washington 98504-8343
(360) 586-3065 • Fax Number (360) 586-3067 • Website: www.dahp.wa.gov

May 3, 2010

Ms. Melissa H Russ
JAD Environmental LLC
PO Box 3516
Evergreen, Colorado 80437

Re: City of Ellensburg Smart Grid Project
Log No.: 050310-01-DOE

Dear Ms. Russ:

Thank you for contacting our Department on behalf of the City of Ellensburg and Bartelle Memorial Institute. We have reviewed the materials you provided for the proposed City of Ellensburg Smart Grid Demonstration Project in Kittitas County, Washington.

We concur with the proposed definition of the Area of Potential Effect (APE) as illustrated. We recommend a professional archaeological survey for any areas proposed for ground disturbance.

We look forward to receiving the results of the archaeological survey, the results of consultations with the concerned tribes, and your final determination. We would also appreciate receiving any correspondence or comments from concerned tribes or other parties that you receive as you consult under the requirements of 36CFR800.4(a)(4).

These comments are based on the information available at the time of this review and on behalf of the State Historic Preservation Officer in compliance with the Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations 36CFR800.4. Should additional information become available, our assessment may be revised, including information regarding historic properties that have not yet been identified. Thank you for the opportunity to comment and we look forward to receiving the reports on the results of your investigations.

Sincerely,

A handwritten signature in blue ink, appearing to read "Rob Whitlam".

Robert G. Whitlam, Ph.D.
State Archaeologist
(360)586-3080
email: rob.whitlam@dahp.wa.gov





United States Department of the Interior
FISH AND WILDLIFE SERVICE
Washington Fish and Wildlife Office
Central Washington Field Office
215 Melody Lane, Suite 119
Wenatchee, WA 98801



June 1, 2010

In Reply Refer To:

USFWS Reference: 13260-2010-TA-0063
Hydrologic Unit Codes: 17-03-00-01-03
RE: Ellensburg Renewable Energy Park

Mr. Fred Pozzuto
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road
Bldg. 1, MS B07
Morgantown, WV 26507-0880

Dear Mr. Pozzuto:

The U.S. Fish and Wildlife Service (Service) has received your letter regarding the installation of an additional 50 to 85 kilowatts of solar panels and 50 to 70 kilowatts of small wind turbine systems at the City of Ellensburg's Renewable Energy Park (Park) in Kittitas County, Washington. In your letter you stated that the Department of Energy (DOE) has determined that the proposed additions to the Park will have no effect on federally listed species.

The Service acknowledges your no effect determination and has no additional comments to provide regarding listed species at the Park.

Please be advised however, that the proposed wind power facility may result in impacts to migratory birds at the project location. The Migratory Bird Treaty Act (MBTA) prohibits the taking of migratory birds except when specifically authorized by the Department of Interior (16 USC 703). Most native songbirds, wading birds, waterfowl, and birds of prey are protected under the MBTA. Authorization by the Department of Interior would consist of a permit, and neither the MBTA or its implementing regulations (50 CFR 21) provide for the issuance of permits authorizing "incidental take" of migratory birds that may be killed or injured by otherwise lawful activities, such as wind power generation. Eagles are afforded additional protections under the Bald and Golden Eagle Protection Act (BGEPA).

The Service's voluntary, Interim Guidance on Avoiding and Minimizing Impacts from Wind Turbines might be helpful as you evaluate your wind power generation site (<http://www.fws.gov/habitatconservation/wind.htm>). The guidance contains a site evaluation and ranking process to assess potential impacts, as well as recommendations for conducting post-construction monitoring. The guidance also contains more information on wildlife laws and permitting in Appendices 3 and 5.

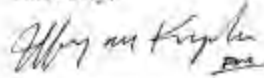


Fred Pozzuto

2

If you have any questions or comments regarding this letter, please contact Gregg Kurz at the Central Washington Field Office in Wenatchee at (509)665-3508, extension 22, or via e-mail at Gregg_Kurz@fws.gov.

Sincerely,



Ken S. Berg, Manager
Washington Fish and Wildlife Office

From: [Woody Argo](#)
To: Bill_Vogel@fws.gov; greg_kurtz@fws.gov
Cc: melissan@eoetels.com
Subject: Ellensburg EA
Date: Friday, June 11, 2010 5:04:09 PM
Attachments: [Scan001_USFWS_response.pdf](#)
[Final USF&WS letter with Letterhead.pdf](#)

Hi Bill:

Thank you very much for your assistance and the discussion we had today on the proposed small wind farm at the Ellensburg Renewable Energy Park. Attached you will find the letter DOE sent to USFWS and the response they received. I would appreciate any assistance in determining how to move forward with the project and what DOE should further submit to USFWS for consultation purposes. I have gone through the 2003 interim guidelines and have provided you with information pertaining to the 3 acre project per the site evaluation (these are also briefly discussed in the letter).

After review of the USFWS interim guidelines on wind power it was determined that both site development and turbine configuration of the 3-acre area greatly reduced any chance of Migratory Bird impacts for the following reasons:

Site Development Recommendations

The following recommendations apply to locating turbines and associated structures within WRAs selected for development of wind energy facilities:

1. Avoid placing turbines in documented locations of any species of wildlife, fish, or plant protected under the Federal Endangered Species Act. (No FWS species present at the site and this was confirmed by USFWS)
2. Avoid locating turbines in known local bird migration pathways or in areas where birds are highly concentrated, unless mortality risk is low. (No concentrations of birds in proposed location)
3. Avoid placing turbines near known bat hibernation, breeding, and maternity/nursery colonies, in migration corridors, or in flight paths between colonies and feeding areas. (No known bat colonies in the area, although there is 1 known maternity and 1 feeding colony. (Although there are 1 maternity colony, 1 feeding colony, and 1 night roost, the proposed location is not in proximity to habitat along the Yakima River)
4. Configure turbine locations to avoid areas or features of the landscape known to attract raptors (hawks, falcons, eagles, owls). (No raptor habitat in the area)
5. Configure turbine arrays to avoid potential avian mortality where feasible. For example, group turbines rather than spreading them widely, and orient rows of turbines parallel to known bird movements, thereby decreasing the potential for bird strikes. Implement appropriate storm water management practices that do not create attractions for birds, and maintain contiguous habitat for area-sensitive species (e.g., Sage Grouse). (Turbines are grouped in 3 areas, perpendicular to seasonal winds, within the wetlands on the other side of I-90)
6. Avoid fragmenting large, contiguous tracts of wildlife habitat. Where practical, place turbines on lands already altered or cultivated, and away from areas of intact and healthy native habitats. If not practical, select fragmented or degraded habitats over relatively intact areas. (Area already developed for 200+ years)
7. Avoid placing turbines in habitat known to be occupied by prairie grouse or other species that exhibit extreme avoidance of vertical features and/or structural habitat fragmentation. (No species exhibit avian avoidance)

8. Minimize roads, fences, and other infrastructure. All infrastructure should be capable of withstanding periodic burning of vegetation, as natural fires or controlled burns are necessary for maintaining most prairie habitats. *Area previously developed.*
9. Develop a habitat restoration plan for the proposed site that avoids or minimizes negative impacts on vulnerable wildlife while maintaining or enhancing habitat values for other species. For example, avoid attracting high densities of prey animals (rodents, rabbits, etc.) used by raptors. *Area to be continually mowed and maintained to reduce small mammal species.*
10. Reduce availability of carrion by practicing responsible animal husbandry (removing carcasses, fencing out cattle, etc.) to avoid attracting Golden Eagles and other raptors. *Area to be fenced and/or an additional sign added into the EA the need to survey the area and remove carcasses if located.*

Please let me know if you have any questions. Thank you again.

Wendy

Wendy Arjo, Ph.D.
Environmental Scientist

AGEISS Inc.
Celebrating 21 years!
Olympia, WA
wendya@ageiss.com
(360)678-8748

From: [Wendy Arjo](mailto:Wendy_Arjo)
To: melisa@wvgs.com
Subject: FW: Ellensburg EA
Date: Monday, June 14, 2010 11:16:08 AM

Here is the USFWS response to my inquiry. Please let me know if you have any questions.

Wendy

-----Original Message-----

From: Bill_Vogel@fws.gov [mailto:Bill_Vogel@fws.gov]
Sent: Monday, June 14, 2010 9:59 AM
To: Wendy Arjo
Cc: gregg_kurz@fws.gov
Subject: Re: Ellensburg EA

Hi Wendy:

I just left you a voicemail as well. In a nutshell, after reviewing the information in your email including both incoming and outgoing letters, I called Gregg Kurz and confirmed that he and I view this in the same manner. We (FWS) have no objections to this project. In the spectrum of proposals we see, this is a relatively low risk project and no project is likely to have zero risk to migratory birds. The letter was written to ensure the recipients were aware of their responsibilities and liabilities-- and unfortunately we do not have a mechanism to alleviate those liabilities.

If you feel you need further assistance or explanation, Gregg or I can help you... but again, we have no objections to this project.

I appreciate you sharing your concerns with us, it is part of the learning experience for us as well.

Bill

William O. Vogel, Fish and Wildlife Biologist
(Forest HCPs, Energy Coordinator, NEPA Contact)
U.S. Fish and Wildlife Service
Washington Fish and Wildlife Office
510 Desmond Drive
Lacey, WA 98503
Office: (360) 753-4367
Cell: (360) 528-9145
Fax: (360) 753-9518
Bill_Vogel@fws.gov



NATIONAL ENERGY TECHNOLOGY LABORATORY
Albany, OR • Morgantown, WV • Pittsburgh, PA



July 15, 2010

Confederated Tribes of the Colville Reservation
Mike Marchand, Chairman
P.O. Box 150
Nespelem, WA 99155-0150

RE: U.S. Department of Energy transmittal of Cultural Resource Inventory for the City of Ellensburg Solar Community Expansion Project, Kittitas County, Washington

Dear Mr. Marchand:

As discussed in our letter to you of April 28, 2010, the U.S. Department of Energy (DOE) is proposing to provide a financial assistance grant to Battelle Memorial Institute (Battelle) as part of the Smart Grid Demonstration Program, funded through the *American Recovery and Reinvestment Act of 2009* (Recovery Act). If funded Battelle, in conjunction with the City of Ellensburg, would expand the installed capacity of solar energy generation and add wind capacity through the installation of small wind systems at the City of Ellensburg's Renewable Energy Park located in Ellensburg, Kittitas County, Washington.

Since our initial correspondence, the City of Ellensburg retained Central Washington Anthropological Survey of Central Washington University to conduct a cultural resources inventory for the area of potential effect (project site). The inventory included a review of archival records for the project site and pertinent historical and environmental literature to establish a context for potential archaeological resources and an archaeological survey across the area. The cultural resources inventory meets DOE's obligations under Section 106 of the *National Historic Preservation Act* and the *Native American Graves Protection and Repatriation Act of 1990*. The inventory is attached for your review. Findings include the following:

- The archaeological survey did not identify archaeological resources. Much of the area of potential effect occurs in a section of the Yakima River floodplain that has been extensively modified over the past 100 years by previous land use, including irrigation and plowing of previously irrigated pasture land, installation of a paved trail connecting West Ellensburg Park with Irene Reinhardt Park, construction of Interstate 90, and installation of the existing Renewable Energy Park. No further cultural resources field work is recommended.

3610 Collins Ferry Road, P.O. Box 880, Morgantown, WV 26507

- The closest documented archaeological resource to the project site is a concrete irrigation wing-dam feature and ditch associated with diversion of irrigation water from a channelized section of Reecer Creek, located about 165 feet north of the project area.

Based on the conclusions of the enclosed cultural resources inventory, DOE determined that no properties of traditional religions and cultural significance would be affected by Battelle's proposed project. However, DOE is seeking your review of the inventory to address any comments or questions you may have. Please forward the results of your review and any requests for additional information to DOE's National Energy Technology Laboratory using the contact information provided below:

Mr. Fred Pozzuto
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road
Bldg. 1, MS B07
Morgantown, WV 26507-0880
Telephone: (304) 285-5219
Email: Fred.Pozzuto@netl.doe.gov
Fax: (304) 285-4403

In accordance with the *National Environmental Policy Act of 1969*, DOE prepared an draft environmental assessment (Draft EA) for this project. The draft EA will be released on July 17, 2010, for a 21-day public comment period, during which time you can provide comment for DOE response. The inventory findings as well as related correspondence with our office will be included in an appendix to the final EA. DOE will mail a copy of the draft EA to your office; it will also be available from DOE's National Energy Technology Laboratory web site at <http://www.netl.doe.gov/publications/others/nepa/ea.html>.

Because this is a Recovery Act project, we would appreciate a quick response to our request for review. If you have any questions or require clarification, please contact me as noted above. Thank you in advance for your consideration.

Sincerely,



Fred Pozzuto
Environmental Manager/NEPA Compliance Officer

Enclosure: Cultural Resources Inventory for the City of Ellensburg Solar Community Expansion
Kittitas County, Washington



NATIONAL ENERGY TECHNOLOGY LABORATORY
A Laboratory of the U.S. Department of Energy



July 15, 2010

Confederated Tribes and Bands of the Yakama Indian Nation
Lavina Washines, Chairwoman
P.O. Box 151
Toppenish, WA 98948-0151

RE: U.S. Department of Energy transmittal of Cultural Resource Inventory for the City of Ellensburg Solar Community Expansion Project, Kittitas County, Washington

Dear Ms. Washines:

As discussed in our letter to you of April 28, 2010, the U.S. Department of Energy (DOE) is proposing to provide a financial assistance grant to Battelle Memorial Institute (Battelle) as part of the Smart Grid Demonstration Program, funded through the *American Recovery and Reinvestment Act of 2009* (Recovery Act). If funded, Battelle, in conjunction with the City of Ellensburg, would expand the installed capacity of solar energy generation and add wind capacity through the installation of small wind systems at the City of Ellensburg's Renewable Energy Park located in Ellensburg, Kittitas County, Washington.

Since our initial correspondence, the City of Ellensburg retained Central Washington Anthropological Survey of Central Washington University to conduct a cultural resources inventory for the area of potential effect (project site). The inventory included a review of archival records for the project site and pertinent historical and environmental literature to establish a context for potential archaeological resources and an archaeological survey across the area. The cultural resources inventory meets DOE's obligations under Section 106 of the *National Historic Preservation Act* and the *Native American Graves Protection and Repatriation Act of 1990*. The inventory is attached for your review. Findings include the following:

- The archaeological survey did not identify archaeological resources. Much of the area of potential effect occurs in a section of the Yakima River floodplain that has been extensively modified over the past 100 years by previous land use, including irrigation and plowing of previously irrigated pasture land, installation of a paved trail connecting West Ellensburg Park with Irene Reinhardt Park, construction of Interstate 90, and installation of the existing Renewable Energy Park. No further cultural resources field work is recommended.

3610 Collins Ferry Road, P.O. Box 880, Morgantown, WV 26507

- The closest documented archaeological resource to the project site is a concrete irrigation wing-dam feature and ditch associated with diversion of irrigation water from a channelized section of Reecer Creek, located about 165 feet north of the project area.

Based on the conclusions of the enclosed cultural resources inventory, DOE determined that no properties of traditional religious and cultural significance would be affected by Battelle's proposed project. However, DOE is seeking your review of the inventory to address any comments or questions you may have. Please forward the results of your review and any requests for additional information to DOE's National Energy Technology Laboratory using the contact information provided below:

Mr. Fred Pozzuto
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road
Bldg. 1, MS B07
Morgantown, WV 26507-0880
Telephone: (304) 285-5219
Email: Fred.Pozzuto@netl.doe.gov
Fax: (304) 285-4403

In accordance with the National Environmental Policy Act of 1969, DOE prepared an draft environmental assessment (Draft EA) for this project. The draft EA will be released on July 17, 2010, for a 21-day public comment period, during which time you can provide comment for DOE response. The inventory findings as well as related correspondence with our office will be included in an appendix to the final EA. DOE will mail a copy of the draft EA to your office; it will also be available from DOE's National Energy Technology Laboratory web site at <http://www.netl.doe.gov/publications/others/nea/ea.html>.

Because this is a Recovery Act project, we would appreciate a quick response to our request for review. If you have any questions or require clarification, please contact me as noted above. Thank you in advance for your consideration.

Sincerely,



Fred Pozzuto
Environmental Manager/NEPA Compliance Officer

Enclosure:
Cultural Resources Inventory for the City of Ellensburg Solar Community Expansion Kititas
County, Washington



NATIONAL ENERGY TECHNOLOGY LABORATORY
Arling Hall • Morgantown, WV • Pittsburgh, PA



July 15, 2010

Robert G. Whitlam, Ph.D., State Archaeologist
Department of Archaeology & Historic Preservation
1063 South Capitol Way, Suite 106
Olympia, WA 98501

RE: U.S. Department of Energy transmittal of Cultural Resource Inventory for the City of
Ellensburg Solar Community Expansion Project, Kittitas County, Washington

Dear Dr. Whitlam:

As discussed in our letter to you of April 28, 2010, and in the EZI-Form 008 we submitted on the same date, the U.S. Department of Energy (DOE) is proposing to provide a financial assistance grant to Battelle Memorial Institute (Battelle) as part of the Smart Grid Demonstration Program, funded through the *American Recovery and Reinvestment Act of 2009* (Recovery Act). If funded Battelle, in conjunction with the City of Ellensburg, would expand the installed capacity of solar energy generation and add wind capacity through the installation of small wind systems at the City of Ellensburg's Renewable Energy Park located in Ellensburg, Kittitas County, Washington.

DOE is in receipt of your letter response of May 3, 2010. Per your recommendation, the City of Ellensburg retained Central Washington Anthropological Survey of Central Washington University to conduct a cultural resources inventory for the area of potential effect (project site). The inventory included a review of archival records for the project site and pertinent historical and environmental literature to establish a context for potential archaeological resources and an archaeological survey across the area. The inventory is attached for your review. Findings include the following:

- The archaeological survey did not identify archaeological resources. Much of the area of potential effect occurs in a section of the Yakima River floodplain that has been extensively modified over the past 100 years by previous land use, including irrigation and plowing of previously irrigated pasture land, installation of a paved trail connecting West Ellensburg Park with Irene Reinhardt Park, construction of Interstate 90, and installation of the existing Renewable Energy Park. No further cultural resources field work is recommended.

3610 Collins Ferry Road, P.O. Box 880 Morgantown, WV 26507

- The closest documented archaeological resource to the project site is a concrete irrigation wing-dam feature and ditch associated with diversion of irrigation water from a channelized section of Reecer Creek, located about 165 feet north of the project area.

DOE has sent consultation letters to the Confederated Tribes of the Colville Reservation and to the Yakama Indian Nation. No responses have been received. The enclosed cultural resources inventory is also being forwarded to them. Based on the conclusions of the enclosed cultural resources inventory, DOE has determined that no historic properties would be affected by Battelle's project. In compliance with 36 CFR Part 800.4(d) (1), DOE asks the Department of Archaeology and Historic Preservation for its concurrence of this finding. Please forward the results of your review and any requests for additional information to DOE's National Energy Technology Laboratory using the contact information provided below:

Mr. Fred Pozzuto
U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road
Bldg. 1, MS B07
Morgantown, WV 26507-0880
Telephone: (304) 285-5219
Email: Fred.Pozzuto@netl.doe.gov
Fax: (304) 285-4403

In accordance with the *National Environmental Policy Act of 1969*, DOE prepared a draft environmental assessment (Draft EA) for this project. The draft EA will be released on July 17, 2010, for a 21-day public comment period, during which time you can provide comment for DOE response. Since consultation with your office is ongoing, DOE will include the findings of the attached cultural resources inventory and correspondence with your office in an appendix to the final EA. DOE will mail a copy of the draft EA to your office; it will also be available from DOE's National Energy Technology Laboratory web site at <http://www.netl.doe.gov/publications/others/nepa/ea.html>.

Because this is a Recovery Act project, we would appreciate a quick response to our request for review. If you have any questions or require clarification, please contact me as noted above. Thank you in advance for your consideration.

Sincerely,



Fred Pozzuto
Environmental Manager/NEPA Compliance Officer

Enclosure: Cultural Resources Inventory for the City of Ellensburg Solar Community Expansion
Kittitas County, Washington



STATE OF WASHINGTON

DEPARTMENT OF ARCHAEOLOGY & HISTORIC PRESERVATION

1063 S. Capitol Way, Suite 106 • Olympia, Washington 98501
Mailing address: PO Box 48343 • Olympia, Washington 98504-8343
(360) 586-3065 • Fax Number (360) 586-3067 • Website: www.dahp.wa.gov

July 20, 2010

Mr. Fred Pozzuto
National Energy Technology Laboratory
3610 Collins Ferry Road
Morgantown, West Virginia 26507-0880

Re: Ellensburg Solar Community Expansion Project
Log No: 050310-01-DOE

Dear Mr. Pozzuto

Thank you for contacting our department. We have reviewed the Draft professional archaeological survey report you provided for the proposed City of Ellensburg Solar Community Expansion Project, Kittitas County, Washington.

We concur with your Determination of No Historic Properties Affected. Please provide the finalized report and a .pdf file on CD when available.

We would appreciate receiving any correspondence or comments from concerned tribes or other parties that you receive as you consult under the requirements of 36CFR800.4(a)(4).

In the event that archaeological or historic materials are discovered during project activities, work in the immediate vicinity must stop, the area secured, and the concerned tribes and this department notified.

These comments are based on the information available at the time of this review and on the behalf of the State Historic Preservation Officer in conformance with Section 106 of the National Historic Preservation Act and its implementing regulations 36CFR800. Should additional information become available, our assessment may be revised. Thank you for the opportunity to comment and a copy of these comments should be included in subsequent environmental documents.

Sincerely,

A handwritten signature in blue ink, appearing to read "R. Whitlam".

Robert G. Whitlam, Ph.D.
State Archaeologist
(360) 586-3080
email: rob.whitlam@dahp.wa.gov



APPENDIX C
ENVIRONMENTAL SYNOPSIS OF SMART GRID DEMONSTRATIONS
PROGRAM AREA OF INTEREST ONE – SMART GRID

APPENDIX D

**CULTURAL RESOURCE INVENTORY FOR THE CITY OF ELLENSBURG
RENEWABLE PARK EXPANSION, KITTITAS COUNTY, WASHINGTON**

The following document was prepared by the University of Washington for the City of Ellensburg.

**FINDING OF NO SIGNIFICANT IMPACT
FOR THE
BATTELLE MEMORIAL INSTITUTE'S
SMART GRID PROJECT AT THE
CITY OF ELLENSBURG'S RENEWABLE ENERGY PARK,
KITTTAS COUNTY, WASHINGTON**

RESPONSIBLE AGENCY: U.S. Department of Energy (DOE)

ACTION: Finding of No Significant Impact (FONSI)

SUMMARY: DOE completed the *Final Environmental Assessment for the Battelle Smart Grid Project at the City of Ellensburg's Renewable Energy Park, Kittitas County, Washington* (DOE/EA-1756). Based on the analysis in the environmental assessment (EA), DOE determined that the proposed action – providing federal assistance to Battelle Memorial Institute (Battelle) to facilitate the installation of 540 additional solar panels, 10 solar concentrating modules, and 8 small wind energy generating systems at the City of Ellensburg's Renewable Energy Park – would result in no significant adverse impacts. DOE further determined that the City of Ellensburg's proposed project would provide a minor reduction in greenhouse gas emissions and have a net beneficial impact on air quality in the region

BACKGROUND: As part of the *American Recovery and Reinvestment Act of 2009* (Recovery Act) (Recovery Act; Public Law 111-5, 123 Stat. 115), DOE's National Energy Technology Laboratory (NETL), on behalf of the Office of Electricity Delivery and Energy Reliability, is providing up to \$435 million in federal funding for competitively awarded agreements to facilitate the deployment of Smart Grid Demonstrations, specifically: (1) regionally unique smart grid demonstration projects to quantify smart grid costs, benefits, and cost-effectiveness; verify smart grid technology viability; and validate new smart grid business models, all at a scale that can be readily adapted and replicated around the country; and (2) energy storage demonstration projects for major, utility-scale, energy storage installations to help establish costs and benefits; verify technical performance; and validate system reliability and durability, all at scales that can be readily adapted and replicated.

The federal action of providing funding for these projects requires compliance with the *National Environmental Policy Act of 1969* (NEPA), as amended (NEPA; 42 U.S.C. §§ 4321 et seq.), Council on Environmental Quality regulations (40 CFR Parts 1500 to 1508), and DOE NEPA implementing procedures (10 CFR Part 1021). DOE prepared an EA to evaluate the potential environmental consequences of providing a grant for this proposed project under the Smart Grid initiative.

PURPOSE AND NEED: The overall purpose and need for DOE's action pursuant to the Smart Grid Demonstration Program and the funding opportunity under the Recovery Act is to accelerate the development and production of a smarter, more efficient, more resilient electrical grid. The program will help verify smart grid technology viability, quantify smart grid costs and benefits, and validate new smart grid business models at a scale that can be readily adapted and replicated around the country. DOE considers this sub-project of Battelle's (City of Ellensburg) to be a project that can meet these objectives.

DESCRIPTION OF THE PROPOSED ACTION: DOE's proposed action is to provide a financial assistance to partially fund construction and operation of Battelle's proposed expansion of renewable energy technologies at the City of Ellensburg's existing Renewable Energy Park located in Ellensburg, Kittitas County, Washington. Specifically, the proposed project would expand the installed capacity of solar energy at the park by adding 540 thin-film nanotechnology solar panels and wind generation capabilities through the installation of eight small turbines of 2.5 to 30 kilowatts (kW). The project would add up to 85 kW of solar-generating capacity and up to 80 kW of small wind-generating capacity. By using different technologies in each wind system, the project would provide information to evaluate each turbine's performance capabilities. All of the power produced at this energy park connects to and supplements the City's power lines. DOE would provide \$600,000 in financial assistance in the form of a cooperative agreement to Battelle Institute. The cost of the project is estimated at \$1.2 million.

ALTERNATIVES CONSIDERED: In addition to the proposed action, DOE considered the No-Action Alternative as required under NEPA. Under the No-Action Alternative, DOE would not provide funds for the proposed project. For the purposes of the EA, DOE assumed that the project would not proceed without DOE funding. This assumption established a baseline against which the potential environmental impacts of the proposed project were compared.

ENVIRONMENTAL CONSEQUENCES: DOE evaluated the potential environmental consequences of the proposed project and the No-Action Alternative. DOE considered 14 environmental resource areas in the EA; however, not all areas were evaluated at the same level of detail. For six of the resource areas (socioeconomics, environmental justice, occupational health and safety, utilities and materials, transportation, and waste generation), DOE determined there would be no impacts or the potential impacts would be small, temporary, or both, and therefore did not carry these areas forward for additional analysis. DOE focused its more detailed analyses on those resources that could require new or amended permits, have the potential for significant impacts or controversy, or interest the public. These resource areas included: air quality, noise, aesthetics and visual resources, soils and geology, water resources, biological resources, and cultural resources.

The proposed project would be designed in compliance with federal and state air quality regulations, reduce greenhouse gas emissions, and have a net beneficial impact on air quality in the region. Operation of the concentrating solar modules and eight small wind turbines would cause a negligible increase in noise outdoors near the adjacent interstate and recreation park. The aesthetics of the City of Ellensburg's Renewable Energy Park would change with the addition of ten 18-foot-diameter solar concentrating modules and eight towers ranging from 40 to 100 feet in height; however, these changes would be in compliance with the City and County proposed regulations for wind turbines. Adverse impacts to visual resources would be minimal.

There would be no adverse impacts to the 100-year floodplain associated with Reecer Creek, and no increase in risk to lives or property in the area from the project. Developing 3 acres for further construction of the City of Ellensburg's Renewable Energy Park would not adversely impact any plant or animal species because the project site is small and isolated from larger tracks of undisturbed land, and because plant and animal species found there are common and widespread in the region. The risk of bat and migratory bird collisions with the wind turbines is not likely due to the configuration of the turbines (parallel to bird movements toward the wetlands and grouped configuration), the relatively short height of the wind turbines (< 60'), and placement in previously

disturbed habitat paralleling the interstate highway. In support of this EA, a cultural resources inventory was conducted for the area of potential effect (project site). No archaeological resources were identified, and DOE determined (after coordination with the Washington State Historic Preservation Office [SHPO]) that no historic properties would be affected by Battelle's project. In summary, expanding the City of Ellensburg's Renewable Energy Park with additional solar panels, solar concentrating modules, and small wind turbines would not likely result in adverse environmental impacts, particularly considering the existing surrounding uses.

Under the No-Action Alternative, DOE assumed the project would either be delayed, as Battelle sought other funding sources, or abandoned altogether. The potential environmental consequences, if the project was delayed, could be different if the project was modified. If abandoned, the potential environmental consequences would not occur. Furthermore, the potential beneficial impacts would change or not occur.

PUBLIC AVAILABILITY: DOE issued the draft EA on July 17, 2010, and advertised its release in the *Ellensburg Daily Record* on July 17, 19, and 20, 2010. In addition, DOE sent copies for public review to the Ellensburg Public Library. DOE established a 21-day public comment period that began July 17, 2010, and ended August 6, 2010. DOE announced it would accept comments by mail, email, and fax. The draft EA was also sent to the applicable federal, state, and local agencies. No public comments were received.

Copies of the final EA and this FONSI were sent to stakeholders and resource agencies that provided comments or consultation, and are available at DOE's NEIL web site at <http://www.netl.doe.gov/publications/others/nepa/ea.html> and DOE's NEPA web site at http://nepa.energy.gov/DOE_NEPA_documents.htm.

DETERMINATION: On the basis of the evaluations in the final EA, DOE determined that the proposed federal action, to provide \$600,000 in financial assistance to partially fund construction and operation of Battelle's proposed expansion of renewable energy technologies at the City of Ellensburg's existing Renewable Energy Park, would have no significant impacts on the human environment. Therefore, preparation of an environmental impact statement is not required, and DOE is issuing this FONSI.

Issued in Pittsburgh, PA, this ^{13th} day of September, 2010.



Anthony Cugini
Director
National Energy Technology Laboratory