Lower Snake River Wind Energy Project

Application for Conditional Use Permit
Garfield County, Washington

Submitted by:

Blue Sky Wind, LLC
And
Puget Sound Energy, Inc.

Lower Snake River Wind Energy Project

Submittal Date:

January 26, 2009

Submitted By:

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Table of Contents

Section **Page**

Appendix

List of Tables

List of Figures

List of Acronyms

BPA	Bonneville Power Administration
CAO	Critical Areas Ordinance
CUP	Conditional Use Permit
DS	Determination of Significance
EIS	Environmental Impact Statement
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
GPD	gallons per day
GPO	goal, policy, and objective
kV	kilovolt
mph	miles per hour
MW	megawatts
NEPA	National Environmental Policy Act
O&M	Operations and Maintenance
SEPA	State Environmental Policy Act
RCW	Revised Code of Washington
ROD	Record of Decision
RPM	revolutions per minute
USGS	United States Geological Survey
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife
WDNR	Washington Department of Natural Resources
WRA	Wind Resource Area

1. Overview of Garfield County Conditional Use Permit Application

Blue Sky Wind, LLC and Puget Sound Energy, Inc. (the Applicant) are jointly applying for a Conditional Use Permit (CUP) from Garfield County for a proposed Wind Energy Facility. As per Garfield County Zoning Ordinance, adopted December 8, 2008, a Conditional Use Permit Application must be submitted for approval of Wind Energy Facilities. This section outlines the information required for a CUP and provides an overview of the detailed project related information contained herein. Section 2 provides project-specific details and a detailed discussion of local and state regulatory compliance is provided in Section 3.

1.1 Permit Application Requirements

1.05.090 (4) Permit Application. Application for a permit to create a Wind Energy Facility, Solar or Fuel Cell Energy Facility, shall be filed at the office of the Zoning Official for a conditional use. The fee for such application shall be set by separate Resolution. The application for a permit shall be in writing, signed by the applicant, and shall include the following:

a. The name and address of the applicant [Provided on Title Page of this document]

b. The location and complete legal description of the proposed facility [Provided in Appendix A of this document]

c. Twenty-four copies of the complete layout plan for persons reviewing the application. These plans shall contain the following information:

- Area and dimensions of the tract of land [Provided in Section 2 of this document]
- Corridors within which proposed wind tower turbines will be located [Provided in Section 2 of this document]
- Number, dimensions of all roads and connections to county roads [Provided in Section 2 of this document]
- Location of any proposed buildings i.e. operations and maintenance buildings or substations [Location of substations provided in Section 2 of this document. The location of the Operations and Maintenance Buildings will be provided upon final infrastructure siting and engineering and prior to procuring required permits]
- Location of any existing buildings [Locations of existing buildings within the project area will be determined through the environmental analysis and provided prior to procuring required permits]

- Location of water, sewer or any existing gas lines [Location of underground facilities will be provided upon final infrastructure siting and engineering and prior to procuring required permits]
- A map or maps of the existing and proposed site topography including grading and drainage plans [Existing topography is shown in project layout maps in the form of United States Geological Survey (USGS) topographic quad maps. Grading and drainage plans will be provided upon final infrastructure siting and engineering and prior to procuring required permits]
- Any other applicable information as might be necessary to interpret the compliance of the plans to the regulations of this Ordinance [To be determined by Garfield County]

d. Such further information as may be requested by the Zoning Official to enable him to determine if the proposed facility will comply with all the requirements of this Ordinance and other applicable state and local regulations. [To be determined by Garfield County].

2. Project Description

2.1 Description of Proposed Use

The proposed Garfield County Lower Snake River Wind Energy Project (the Project) will be located on leased lands encompassing approximately 51,696 acres of land in Garfield County (see Appendix A for property descriptions). The Project is comprised of lands south of Pomeroy, north of the Pataha River, and between the Pataha and the Tucannon Rivers (see Figures 2-1 and 2-2). For ease of displaying proposed development plans and evaluating resources, the Project is divided into three Wind Resource Areas (WRAs). The WRAs do not represent distinct project areas, but rather areas within which development activities such as documenting the wind resource, evaluation of construction parameters, and land lease negotiations are in various stages of development. Each WRA will be described in detail in Section 2.3. As a whole the Project will potentially produce up to 800 megawatts (MW) of electricity, which will be interconnected to the Little Goose-Lower Monument transmission line operated by Bonneville Power Administration (BPA). A new substation which will be owned and operated by BPA will be needed for the interconnection. The substation will be sized to accommodate additional regional energy development, including proposed wind resource areas in Columbia County. This application is limited to the proposed project description provided herein.

The Project will be constructed in three or more phases, herein referred to as Construction Phases, with the first phase of construction proposed to begin in 2010. Each Construction Phase will take approximately 9-12 months to construct. Construction will be concentrated in the spring, summer and fall months. In Section 2.2 the Applicant has provided a description of the construction sequencing process. Each of the three WRAs will likely share infrastructure where possible to limit the amount of overhead transmission lines and other facilities. For this reason, phased construction activities may occur simultaneously in adjacent WRAs.

Each WRA will include the facilities listed below, though depending upon the phased construction sequence, facilities may be shared with adjacent WRAs (detailed descriptions are included in the following section):

- Wind turbine generators erected on tubular steel towers
- Individual turbine step-up transformers to increase the voltage of electricity to 34.5 kilovolts (kV)
- A 34.5 kV electrical system to collect energy from the wind turbine generators. The majority of the collector system will be buried underground; however, portions of the collector system may need to be carried overhead where underground cabling is not feasible
- Up to 2 substations
- An overhead transmission line to transmit energy from the Project to the BPA substation

25008D2207-01

NOT TO SCALE

WHITMAN COUNTY

COLUMBIA COUNTY

GARFIELD COUNTY

KUHL RIDGE WIND RESOURCE AREA

OLIPHANT WIND RESOURCE AREA

DUTCH FLAT WIND RESOURCE AREA

CENTRAL FERRY STATE PARK

PATAHA

GOULD CITY

LEGEND

- PROJECT BOUNDARY
- COUNTY BOUNDARY
- STATE BOUNDARY
- OLIPHANT WIND RESOURCE AREA
- KUHL RIDGE WIND RESOURCE AREA
- DUTCH FLAT WIND RESOURCE AREA

NORTH

0 3 km 6 9

0 miles 3 6

feet 0 3k 6k 9k 12k 15k 30k

ENLARGED PROJECT AREA - WASHINGTON

01	EW	010609	CF	010609	FIRST ISSUE
ISSUE	DRAWN	DATE	APPD	DATE	REVISION NOTES

LAYOUT DWG N/A T-LAYOUT NO. N/A

DRAWING NUMBER 25008D2207-01

COORDS UTM ZONE 11 NAD27 METERS

PURPOSE PRELIMINARY

SCALE 1:60,000 ORIGINAL PLOT SIZE A1

PROJECT TITLE
WASHINGTON – LOWER SNAKE RIVER WIND FARM

Figure 2-1

General Project Area Map

DRAWING NUMBER 25008D2502–02

WHITMAN COUNTY

COLUMBIA COUNTY

GARFIELD COUNTY

0 2 km 4 6

0 miles 2 4

0 2k 3k 6k 8k 10k 20k

NORTH

LAND BOUNDARY

COUNTY LINE

LEASED ACREAGE: (55,210 ACRES)

ISSUE	DRAWN	DATE	APPD	DATE	REVISION NOTES
02	EW	122908	CF	010609	PROJECT BOUNDARY UPDATE
01	EW	121108	BH	121108	FIRST ISSUE

LAYOUT DWG N/A T-LAYOUT NO. N/A

DRAWING NUMBER 25008D2502–02

COORDS UTM ZONE 11, NAD27, METERS

PURPOSE PRELIMINARY

SCALE 1:50,000 ORIGINAL PLOT SIZE A1

PROJECT TITLE
WASHINGTON – LOWER SNAKE RIVER WIND FARM

Figure 2-2

Leased Lands Map

- An operations and maintenance facility
- Upgrades to existing county and private access roads and construction of new access roads where necessary
- Permanent meteorological towers for measuring wind speed and direction

Final siting of all facilities is contingent upon completion of environmental studies and detailed engineering and constructability studies.

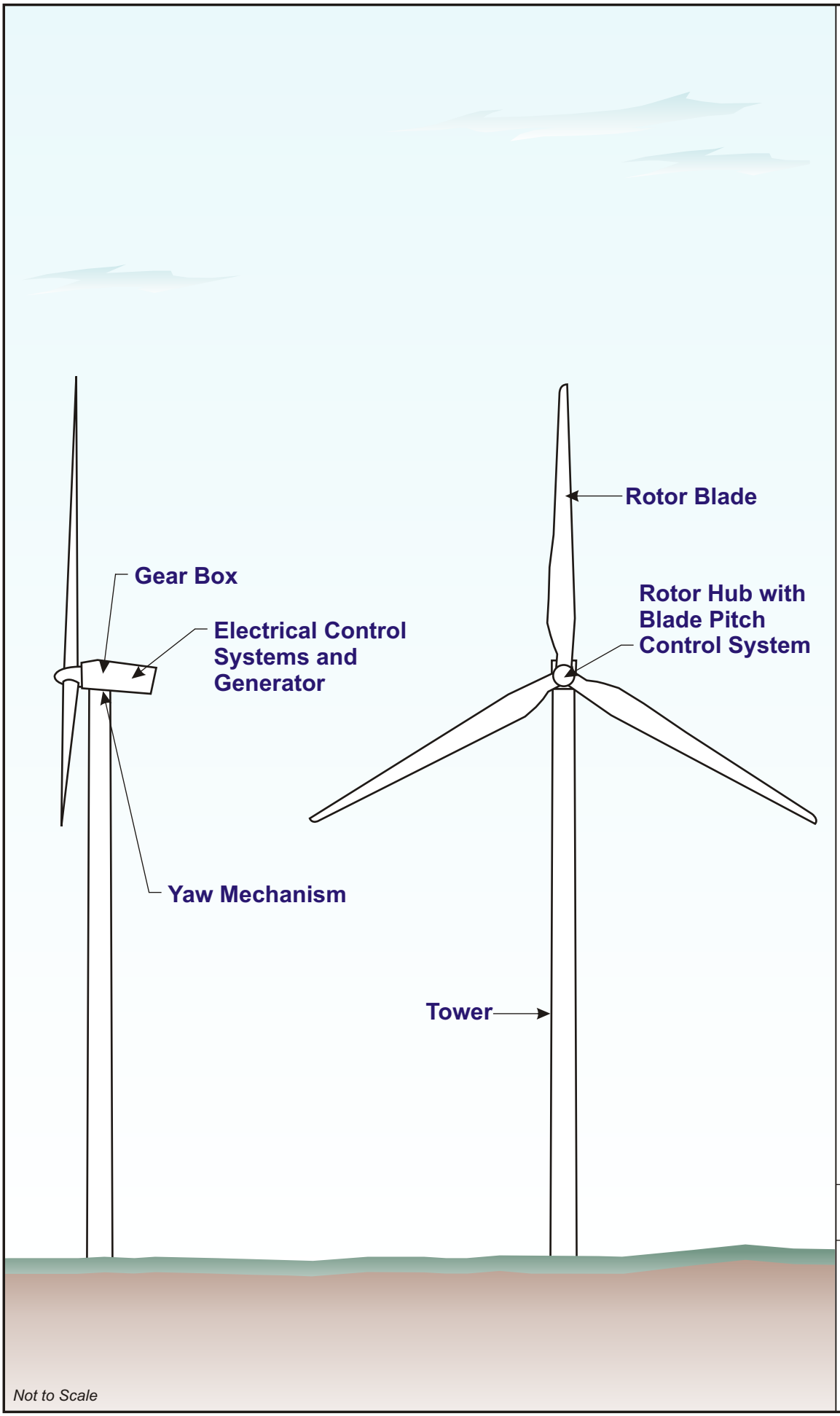
The following sections provide a detailed description of the facilities mentioned above.

2.1.1 Turbines

The Applicant is currently considering several different wind turbine models for the Project. Final turbine selection may not take place until a few months prior to construction. Nevertheless, the applicant has chosen one turbine model which we are considering to use in the environmental analysis. In general, modern commercial wind energy turbines do not differ greatly in size and appearance. At this time the turbines the applicant is considering a range from 1.8-3.0 MW. For planning purposes we have assumed the 1.8 MW machines would be used, which allows us to evaluate environmental impacts of the greatest number of turbines. Turbine models not considered in this permit application may become available and may be considered in the future. Environmental analysis will take into consideration the largest scale turbine that could be used for this proposed project.

A typical 1.8 MW wind turbine generator as shown in Figure 2-3 consists of a tubular steel tower, which is mounted on a reinforced concrete foundation. Atop the tubular steel tower, the nacelle houses the components and supports a rotor with three blades. The total height of the turbine tower and blades is expected to be 410 feet. Turbines are placed in linear groups called “strings” and connected by a 34.5 kV underground electrical cable collector line which transmits electricity to a substation. Along the strings, turbines are spaced between 590 and 900 feet apart.

The applicant has determined approximate or “indicative” locations for proposed turbine strings within each of the WRAs (see Section 2.3 for a description of these WRAs and for associated permitting layouts). Alternative turbine locations have also been identified. Environmental analysis will be inclusive of alternative locations. The number of turbines and the final proposed location will depend upon a number of factors including the type and size of turbine selected, environmental impacts identified during the Washington State Environmental Policy Act (SEPA) review, and engineering and construction constraints. For these reasons, the applicant has asked for flexibility in the permitting process to allow micrositing of turbines and other facilities to take place within a larger corridor area approved by the county through the conditional use permit process. Final siting of turbines and associated infrastructure will be presented in a building permit application which will be submitted to the county after approval of the conditional use permit.



PROJECT TITLE
LOWER SNAKE RIVER
WIND FARM

Figure 2-3

Typical Wind Turbine Generator

Turbine Towers

The towers are mounted on a reinforced concrete foundation. The tower is tapered from the base to the hub, with a base diameter of approximately 14 feet. The tower is hollow and houses a ladder to access the nacelle and electrical components. A controller box is situated at the base within the tower. Access to the tower is restricted by a locked steel door for safety and security reasons.

The tower foundations may either be a spread footing or pier-type footing (described in Section 2.2.1). Regardless of the footing type, a permanent cleared area will be maintained around each turbine approximately 23 feet in diameter. The temporarily disturbed areas outside of the permanently maintained area will be restored to their original condition.

Nacelle

The nacelle houses several of the turbine components, including the turbine's main shaft, gearbox, brakes, bearings, cooling system, hydraulic systems, yaw gears, generator, and in some models the step-up transformer is located in the nacelle. The nacelle and the associated components (without the blades) weigh approximately 41 tons.

The nacelle will also have an anemometer to measure wind speeds and direction, which in turn controls the yaw mechanism to turn the nacelle and rotor to capture the wind. The Federal Aviation Administration (FAA) will also require lighting on selected turbines. The lighting scheme will be determined in consultation with the FAA.

Turbine Blades and Rotor

Three turbine blades attach to the turbine's main shaft via a blade hub. The combined weight of the three blades and blade hub would be approximately 80 tons. Depending upon the turbines selected for the project, the blades will be made of either carbon fiber or laminated fiberglass. For the representative turbine size selected, the blades are approximately 147 feet in length and when they spin will cover an area approximately 295 feet in diameter; this is known as the rotor swept area.

The rotor's rotational speed ranges from 10 to 20 revolutions per minute (rpm). The turbines operate on a variable pitch principal in which the rotor blades rotate about their axis to maintain an optimum position to maximize electrical output for wind speeds while maintaining a constant rotational speed. The turbines will begin to generate electricity at wind speeds of approximately 8 miles per hour (mph) and will be shut down at speeds exceeding 56 mph.

2.1.2 Electrical System

The generator located in each nacelle will generate electricity at 690 volts. Depending upon the turbine selected, the electrical system will consist of 5 key elements:

1. Individual step-up transformers to increase the voltage of electricity generated by each turbine to 34.5 kV.
2. An electrical collector system would collect energy at 34.5 kV from each wind turbine, primarily using underground cabling. Overhead cabling will only be used in areas where underground cabling is not feasible.
3. A project substation will receive the electricity delivered by the collector system. This substation would further increase the voltage of electricity to 230 kV.
4. An overhead transmission line to deliver electricity from the Project substations to the new BPA substation.
5. A new BPA substation which is required for the interconnection to the existing BPA transmission system.

Step-Up Transformers

Each wind turbine will generate power at 690 volts. A step-up transformer is needed at each turbine to increase the voltage from 690 volts to 34.5 kV. The step-up transformer is housed within the nacelle located at the top of the turbine tower.

Collector System

From each step-up transformer, power will be transmitted via 34.5 kV electric cables. The majority of the collector system will be buried underground in a trench 3 feet wide and 3 to 4 feet deep. Cabling trenches will be sited in areas paralleling existing or new roads where possible to minimize ground disturbance. Trenches will be backfilled and fill material will be buried with the cable for protection and insulation. Intermittent cable and junction splice boxes will be located on the ground surface above the underground cabling. The disturbed area will be returned to its original use. The applicant requests the flexibility in siting a limited amount of overhead 34.5 kV cabling, for areas where underground cabling is not feasible. The final siting of the collector system will be identified once final engineering drawings are completed. This information will be presented to the county in a building permit application.

Substations

Up to 5 substations may be needed for the overall Project. Depending upon the construction phasing, a substation may serve adjoining Construction Phases within the same WRA. The Project substations are needed to increase the voltage from the 34.5 kV underground collection system to the 230 kV overhead transmission system. The 230 kV overhead transmission system will carry electricity to a new 500 kV BPA substation, where it will be stepped-up once again to integrate into the existing BPA transmission system. Each Project substation will be located on private lands. Indicative locations are identified on the attached layout maps (see Section 2.3). The applicant requests flexibility in the final siting of the substations, pending final engineering drawings. This information will be provided to the

county in a building permit application for each Construction Phase. The new BPA substation will also be located on private lands in Garfield County. BPA will purchase the lands for the substation from an existing private landowner within the currently defined project corridors. The environmental analysis and land use review of the BPA substation will be considered in the SEPA analysis and in this CUP application. BPA will initiate the National Environmental Policy Act (NEPA) process and issue a Record of Decision (ROD) for the substation on their own schedule.

Overhead Transmission Lines

Approximately 53 miles of 230 kV overhead transmission lines will be needed for the overall Project. Each transmission line will carry electricity from the the Project substations to the new BPA substation. Overhead transmission lines will either be supported by H-Frame wooden structures or single pole structures.

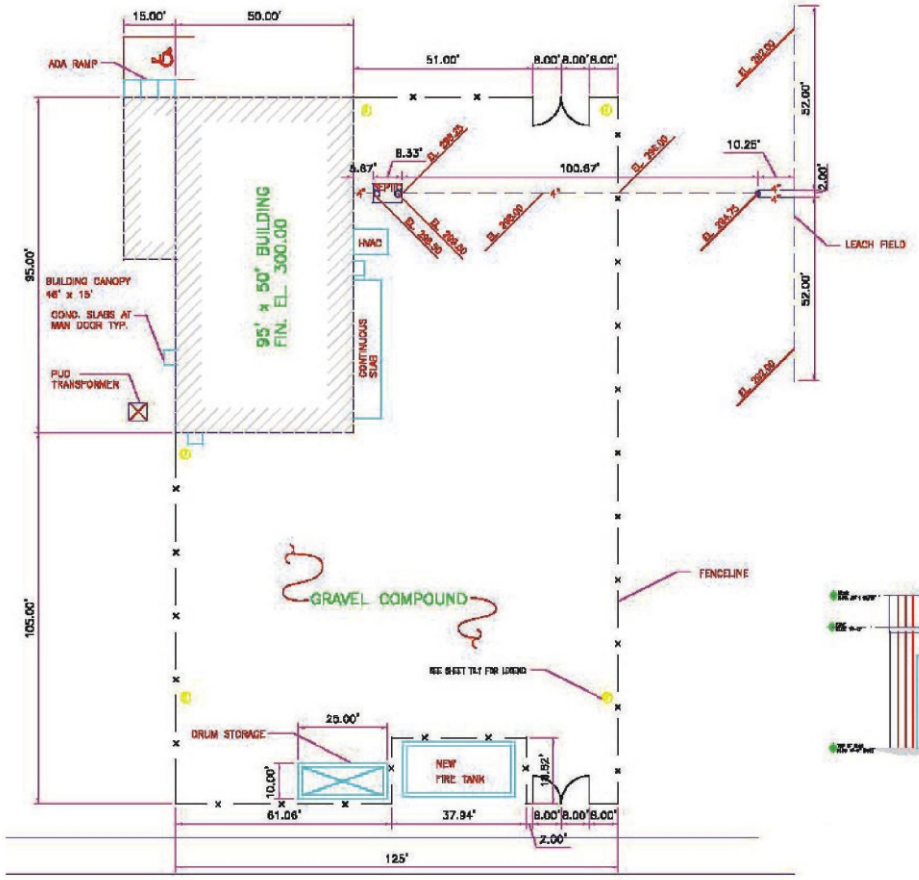
Communication System

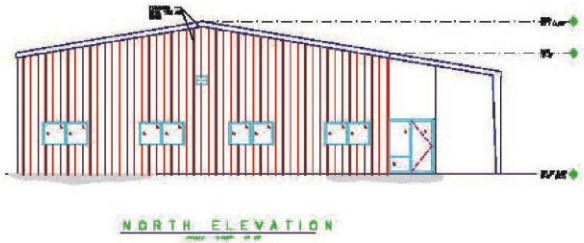
Fiber optic or copper communication lines will follow the collector system. The communication line will run from each wind turbine to the substations and the Operations and Maintenance (O&M) Facility. The communication system will allow individual wind turbines and other project facilities to be monitored and controlled both on-site (in the O&M facility) and from remote locations.

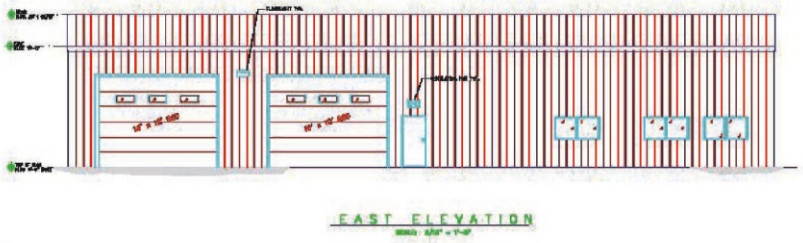
Additionally, a communication system will follow the overhead transmission lines from the project substations to the BPA interconnection substation.

2.1.3 Operations and Maintenance Facility

Up to five O&M Facilities will be needed for the Project; however, where possible multiple WRAs may be served by one O&M facilities. The O&M facilities will each be approximately 4,500 square feet and 20 feet tall. The O&M facilities will have office space, workshop areas, storage, a kitchen facility, a bathroom, shower and utility sink. The building will most likely be a pre-engineered structure. Depending upon the location of the proposed O&M facility, water for the bathroom and kitchen would be from a local well, or will be trucked in and stored in an on-site tank. Water use would be less than 5,000 gallons per day (GPD). The bathroom, kitchen and utility sink will drain into an on-site septic system. A graveled permanent parking area for employees, visitors, equipment and emergency response vehicles will be located adjacent to the building. Figure 2-4 shows a typical O&M facility.







PROJECT TITLE
LOWER SNAKE RIVER
WIND FARM

Figure 2-4

Typical Operations and Maintenance Building

2.1.4 Roads

Access to the Project will be provided by State Highway 12 and a combination of existing private and county roads, as well as new roads constructed for project access. New road construction and upgrades or improvements to existing roads will be done according to Garfield County ordinances and through approval of the Garfield County Engineer.

Existing Roads

Existing roads in the project area are generally 8 to 16 feet in width. Some road improvements including widening will be needed to allow use of construction vehicles and transport of turbine parts. Finished upgraded roads will include a gravel, all-weather surfaced roadbed up to 20 feet wide with an additional 5 feet of shoulder on either side. An additional 5-foot temporary shoulder on either side of the road may be needed during construction. The 5-foot temporary shoulders will be reclaimed upon completion of construction, leaving a permanent 20-foot wide road. During construction, some roads may need an additional shoulder for turn-around areas for larger vehicles. These areas will also be reclaimed upon completion of construction. Some existing culverts will need to be replaced with larger-diameter or longer culverts as necessary. Any impacts to drainages or jurisdictional waters will be identified before construction and applicable state and federal permits will be obtained prior to construction. In addition, all culvert and drainage improvements will be made according to state and county regulations and with approval of the Garfield County Engineer. Final road layouts and culvert improvements will be identified in the final engineering drawings and submitted to Garfield County with the appropriate permit.

New Permanent Roads

Approximately 63 miles of new permanent roads will be constructed for the entire Project. In areas where existing roads do not provide access, new graveled roads will be needed. Generally, these new roads will be 20 feet wide, with additional 5-foot permanent shoulders on either side. An additional 5-foot temporary shoulder may be needed during construction. The temporary shoulder will be reclaimed upon completion of construction and returned to its original use. Additionally, some roads may need additional temporary shoulders for turn-around areas for larger vehicles. These areas will also be reclaimed upon completion of construction. New roads will be constructed and maintained in compliance with state and county regulations and with approval of the Garfield County engineer. The final roads layout will be provided once the final engineering drawings are complete and will be submitted to Garfield County with the appropriate permit application.

Temporary Access Roads

In addition to new permanent roads, it may be necessary to construct temporary access roads for construction. For example, installation of the underground cabling will require heavy machinery. In locations where a permanent or existing road do not parallel the underground cable area, a temporary road will be needed. Temporary access roads may require light

grading and compacting. If grading is needed, the topsoil will be stripped and stockpiled for restoration once construction is completed. All temporary roads and disturbance areas will be restored to their original condition upon completion of construction. It is estimated that 50 miles of temporary roads will be needed for the entire Project.

2.1.5 Permanent Meteorological Towers

Up to six permanent meteorological towers will be needed for the Project. The meteorological towers will be used to collect wind speed and direction. Each tower will be up to 220 feet tall and consist of a single, non-guyed, pole secured by a concrete foundation (see Figure 2-5 for an example of a permanent meteorological tower). Installation of permanent meteorological towers requires approximately 3 acres of temporary disturbance per tower. The permanent footprint meteorological tower is approximately 0.06 acres. Permanent meteorological towers will also be fitted with safety lighting as required by the FAA.

2.2 Construction Process

2.2.1 Sequence

The Project will be built in phases, referred to herein as Construction Phases. The first Construction Phase will likely begin construction in 2010. Construction of each phase will take approximately 9-12 months. Due to the unique nature of wind energy facility construction and operation, it is possible that some of the construction elements listed in this section will occur simultaneously. It is also possible that shared facilities will be used between Construction Phases. The following construction sequence is typical for wind energy project construction. Delays in equipment delivery or weather may necessitate changes. Construction activities are listed in the order they are most likely to occur.

Roads

Existing roads will be improved and new and temporary roads will be prepared as described above. Permanent roads will be maintained for the life of the project, while temporary roads will be reclaimed upon completion of construction.

Temporary Staging Areas

Temporary staging areas will be needed throughout the project area to serve as temporary storage for turbine parts and other project components. Each staging area will be approximately 2 acres in size.

Temporary Equipment Parking Area

For each project Construction Phase it is likely that an additional staging area will be needed for equipment and employee parking during construction. Each staging area will be approximately 1-2 acres in size.

PROJECT TITLE
LOWER SNAKE RIVER
WIND FARM

Figure 2-5

Typical Meteorological Tower

Turbine Foundations

Foundations will be one of two types; either a spread-footing foundation or a pier-type foundation depending upon the geologic substrate at each proposed footing. Spread-footing type foundations typically require the following: a 40 foot by 40 foot hole, which is excavated and filled with a layer of backfill, a 3.5 foot layer of reinforced concrete, a 3 foot high reinforced concrete pedestal, 2.5 feet of additional backfill, and 6 inches of topsoil. Pier-type footings require a hole approximately 25 feet deep and 16 feet in diameter. Two concentric corrugated metal cylinders will be placed inside the hole. The space between the two forms is filled with reinforced concrete and the inner cylinder is filled with backfill. The type of footing is determined after geotechnical testing is conducted at each foundation. See Figure 2-6 for an example of the two footing types.

A permanent crane pad and cleared area will be maintained around each turbine for maintenance and access. All temporary impacts associated with turbine installation will be reclaimed as described elsewhere in this application.

Tower and Turbine Installation

Tower and turbine parts are either transported directly to the turbine foundation, or they are transported to a central laydown area and then transferred to another truck for transportation to the foundation. Tower sections are erected using a crane, a permanent turbine crane pad is required at each turbine location for future maintenance as well. Once each tower section is in place, the crane is then used to install the nacelle and blades.

Trenching and Installation of Electrical and Communication Cables

Trenching from underground cabling will include trenches 3-4 feet deep and 3 feet wide. Selected fill will be used to protect the buried cables. Upon results of thermo-resistivity testing it will be determined if outside fill needs to be brought in. The area will be covered with existing topsoil and returned to its original condition upon completion of construction.

Overhead Cabling

Overhead cabling and communication lines will be installed in a manner similar to the overhead transmission line, and where possible overhead cabling will use the same corridors and infrastructure as the overhead transmission lines.

Substation

Each Project substation will be approximately 2 acres. The substation site will be cleared and graded, and will include the foundation and electrical equipment. Equipment will be installed on top of the concrete forms. The substation will be secured by a chain link fence.

PIER TYPE FOOTING

SPREAD TYPE FOOTING

PROJECT TITLE
LOWER SNAKE RIVER
WIND FARM

Figure 2-6

Turbine Foundations

BPA Substation

BPA will manage construction of the interconnection substation, which they will own and operate. The sequence, timing, and specifications of the substation are unknown at this time. Construction of this facility could begin as early as spring of 2010.

Overhead Transmission Line

Overhead transmission lines will be needed to connect the Project substations to the BPA substation at the interconnection point. A right of way for the overhead line routes will be surveyed by a licensed surveyor. Following construction of the selected structure restoration of temporary impact areas will occur.

O&M Facilities

Up to five O&M facilities will be needed for the Project. If possible O&M functions will be consolidated into one facility for two or more WRAs. Detailed specifications will be provided in a building permit application.

Final Testing

All systems will be inspected to ensure proper construction and operations prior to commencement of commercial energy production.

Final Road Grading Restoration and Site Clean-up

The applicant will ensure that roads will be graded to county standards, temporarily disturbed areas will be restored and cleanup of construction and material waste disposed of throughout the construction process in accordance with code requirements.

2.3 Description of Wind Resource Areas

The following sections provide a brief description of each of the three WRAs. As indicated in Section 2.1, the number of turbines and location of facilities for each WRA is projected in this application, and will be refined as the permitting, environmental review, and development process evolve. Because the overall Project will use shared infrastructure such as overhead lines, roads, and possibly O&M facilities, it is possible that construction activities will occur simultaneously within adjacent WRAs.

2.3.1 Kuhl Ridge WRA

The Kuhl Ridge WRA consists of approximately 30,119 acres of land under lease. As currently sited approximately 222 turbines, which could generate approximately 400 MW of electricity is proposed for the Kuhl Ridge WRA. The indicative layout provided in Figure 2-7 shows a preliminary layout for 400 MW in this WRA.

DRAWING NUMBER 01915D0901-04

DO NOT SCALE

Central Ferry Substation (POI)

SUBSTATION KRT

PROPOSED TURBINE (213 of)

ALTERNATE TURBINE (67 of)

PROPOSED SUBSTATION

PROPOSED OHL 230kV

PROPOSED OHL 34.5kV

EXISTING DIRT ROAD FOR UPGRADE

EXISTING ROAD FOR UPGRADE

PROPOSED NEW ROAD

PROPOSED ALTERNATE NEW ROAD

PROJECT BOUNDARY

SURVEY AREA

COUNTY BOUNDARY

BUFFER:
≥100FT FROM EXISTING ROAD CENTERLINES
≥250FT FROM TURBINE STRING CENTERLINES
≥250FT FROM PROPOSED ROAD CENTERLINES
≥250FT FROM PERIMETER OF BUILDINGS

ROAD LAYOUT FROM RES DRAWING 1915D1001-01

NORTH

ISSUE	DRAWN	DATE	APPD	DATE	REVISION NOTES
04	EW	012109	CF	012109	BUFFER ALTERATION
03	EW	010609	CF	010609	TITLE ALTERATION
02	EW	122908	CF	123008	PERMITTING BUFFER ALTERATION
01	BH	061106	CF	111308	FIRST ISSUE

LAYOUT DWG N/A

T-LAYOUT NO. PUSAhop357

DRAWING NUMBER 01915D0901-04

COORDS UTM ZONE 11, NAD 27 METERS

PURPOSE PRELIMINARY

SCALE 1:30,000

ORIGINAL PLOT SIZE A1

PROJECT TITLE
WASHINGTON – KUHL RIDGE WIND FARM

Figure 2-7

Kuhl Ridge Permitting Layout

The Kuhl Ridge WRA also contains the lands needed for the placement of the BPA substation (see Figure 2-7). For the purposes of this CUP application and SEPA review process, an analysis of the potential temporary and permanent footprint impacts (based upon 222 turbines) has been developed (see Table 2-1).

Table 2-1 Kuhl Ridge WRA Approximate Temporary and Permanent Impact Areas in Acres.

Infrastructure	Construction Footprint in Acres (temporary impact area)	Permanent Footprint in Acres (permanent impact area)
Turbine Foundations		5.5
Turbine Crane Pads		52
Additional construction disturbance for turbines	485	
Construction Staging Areas	8	
Substations		4
BPA substation/interconnection		60
Operations and Maintenance Facilities		2
Construction Site Office	3	
Batching Plant	3	
Crushing Plant	4	
Overhead Line Staging Area	5	
Permanent Meteorological Towers	3	0.06
Underground Cabling	64	
Upgrades to existing roads		3
New Road Construction		62
Overhead Line		0.15
Overhead Line Access Road	22	
Total	**597**	**189.71**

2.3.2 Oliphant Ridge WRA

The Oliphant WRA consists of approximately 13,084 acres of leased lands, approximately 139 turbines producing up to 250 MW of electricity (see Figure 2-8). Table 2-2 shows the approximate temporary and permanent impacts associated with proposed development within the Oliphant Ridge WRA. Portions of the Oliphant Ridge WRA extend into Columbia County; therefore construction in portions of this WRA will depend upon receiving appropriate approvals from Columbia County.

DRAWING NUMBER 01420D0905-04

DO NOT SCALE

PROPOSED TURBINE (139 of)

ALTERNATE TURBINE (28 of)

PROPOSED SUBSTATION

PROPOSED OHL 230kV

EXISTING DIRT ROAD FOR UPGRADE

EXISTING ROAD FOR UPGRADE

PROPOSED NEW ROAD

PROPOSED ALTERNATE NEW ROAD

PROJECT BOUNDARY

SURVEY AREA

COUNTY BOUNDARY

BUFFER:
≥100FT FROM EXISTING ROAD CENTERLINES
≥250FT FROM TURBINE STRING CENTERLINES
≥250FT FROM PROPOSED ROAD CENTERLINES
≥250FT FROM PERIMETER OF BUILDINGS

ROAD LAYOUT FROM RES DRAWING 1420D1004-02

NORTH

04	EW	010809	CF	010809	TITLE ALTERATION
03	EW	122908	CF	123008	PERMITTING BUFFER ALTERATION
02	BH	071108	CF	111308	MODIFIED BUFFER REGION
01	BH	220908	CF	100808	FIRST ISSUE
ISSUE	DRAWN	DATE	APPD	DATE	REVISION NOTES

LAYOUT DWG N/A T-LAYOUT NO. PUSAhop304/310

DRAWING NUMBER 01420D0905-04

COORDS UTM ZONE 11, NAD 27 METERS

PURPOSE PRELIMINARY

SCALE 1:30,000 ORIGINAL PLOT SIZE A1

PROJECT TITLE
WASHINGTON – OLIPHANT RIDGE WIND FARM

Figure 2-8

Oliphant Ridge Permitting Layout

Table 2-2 Oliphant Ridge WRA Approximate Temporary and Permanent Impact Areas in Acres.

Infrastructure	Construction Footprint in Acres (temporary impact area)	Permanent Footprint in Acres (permanent impact area)
Turbine Foundations		4
Turbine Crane Pads		32
Additional construction disturbance for turbines	305	
Construction Staging Areas	7.5	
Substations		4
Operations and Maintenance Facilities		2
Construction Site Office	3	
Batching Plant	3	
Crushing Plant	4	
Overhead Line Staging Area	5	
Permanent Meteorological Towers	3	0.06
Underground Cabling	55	
Upgrades to existing roads		3
New Road Construction		43
Overhead Line		0.40
Overhead Line Access Road	60	
Total	**445.5**	**89.46**

2.3.3 Dutch Flats WRA

The Dutch Flats WRA (see Figure 2-9) consists of approximately 8,493 acres of leased lands. The currently proposed layout will consist of approximately 83 turbines which will produce approximately 150 MW of electricity. Table 2-3 shows the approximate temporary and permanent impacts associated with proposed development within the Dutch Flats WRA.

DRAWING NUMBER: 01923D0901-03

DO NOT SCALE

SUBSTATION DF1

PATAHA FLAT

DUTCH FLAT

0 1 km 2 3

0 miles 1 2

0 1k 2k 3k 4k 5k feet 10k

PROPOSED TURBINE (83 of)

ALTERNATE TURBINE (83 of)

PROPOSED SUBSTATION

PROPOSED OHL 230kV

EXISTING DIRT ROAD FOR UPGRADE

EXISTING ROAD FOR UPGRADE

PROPOSED NEW ROAD

PROPOSED ALTERNATE NEW ROAD

PROJECT BOUNDARY

SURVEY AREA

COUNTY BOUNDARY

BUFFER:
- ≥100FT FROM EXISTING ROAD CENTERLINES
- ≥250FT FROM TURBINE STRING CENTERLINES
- ≥250FT FROM PROPOSED ROAD CENTERLINES
- ≥250FT FROM PERIMETER OF BUILDINGS

ROAD LAYOUT FROM RES DRAWING 1923D1002-02

NORTH

ISSUE	DRAWN	DATE	APPD	DATE	REVISION NOTES
03	EW	010609	CF	010609	TITLE ALTERATION
02	EW	121208	BH	121208	BUFFER MODIFICATION
01	BH	071108	CF	111808	FIRST ISSUE

LAYOUT DWG: N/A

T-LAYOUT NO.: PUSAhop306/312

DRAWING NUMBER: 01923D0901-03

COORDS: UTM ZONE 11, NAD 27 METERS

PURPOSE: PRELIMINARY

SCALE: 1:18,000

ORIGINAL PLOT SIZE: A1

PROJECT TITLE: WASHINGTON – DUTCH FLAT WIND FARM

Figure 2-9

Dutch Flats Permitting Layout

Table 2-3 Dutch Flats WRA Approximate Temporary and Permanent Impact Areas in Acres.

Infrastructure	Construction Footprint in Acres (temporary impact area)	Permanent Footprint in Acres (permanent impact area)
Turbine Foundations		2
Turbine Crane Pads		20
Additional construction disturbance for turbines	182	
Construction Staging Areas	4	
Substations		4
Operations and Maintenance Facilities		2
Construction Site Office	3	
Batching Plant	3	
Crushing Plant	4	
Overhead Line Staging Area	5	
Permanent Meteorological Towers	3	0.06
Underground Cabling	35	
Upgrades to existing roads		2
New Road Construction		34
Overhead Line		0.24
Overhead Line Access Road	40	
Total	**279**	**64.3**

2.4 Proposed Project Schedule

For planning purposes the Applicant has prepared a proposed EIS schedule (see Table 2-4).

Table 2-4 Proposed Garfield County SEPA EIS Schedule

Task	Proposed Dates
Submittal of CUP Application and request for Determination of Significance	01/26/2009
County Issues: Determination of Completeness of CUP Application	2/09/2009
County Issues: SEPA Determination of Significance; Notice of Application and Scoping Notice	2/18/2009
SEPA 30 day Scoping Comment Period	2/18/2009 – 3/20/2009
Public Scoping Meetings	3/4/2009, 3/5/2009
Submit Draft EIS to Garfield County for Review	7/3/2009
Draft EIS Comment Period (30 days)	7/17/2009 – 8/16/2009
County Adopts Final EIS	8/30/2009

3. Regulatory Compliance

3.1 Garfield County Comprehensive Plan and Zoning Ordinance

3.1.1 Consistency with the Comprehensive Plan

This Project is proposed for development on land designated as Rural under the Garfield County Comprehensive Plan (GCCP) and is within an agricultural zone. The Project is consistent with the GCCP goals, policies and objectives (GPOs) including enhancements of natural resource uses, continued economic development and appropriate provision of utilities in a pattern which is compatible with adjacent land uses.

3.1.2 Consistency with the Garfield County Zoning Ordinance

The Garfield County Zoning Ordinance (Section 1.03.010) defines the Agricultural Zone as:

> Intended to protect and preserve the character of existing aglands with a minimal amount of development; only allowing land uses which are compatible with the established pattern including the development of low-density residential and commercial uses which support agriculture. It is not intended to allow other land uses of a commercial or industrial nature which have the potential to erode the agricultural character of the zone. Garfield County may allow "renewable energy facilities" as a conditional use in the agricultural zone.

Wind energy facilities are developed at a very low density across large tracts of land, and result in minimal permanent disturbance to the land. When they are sited on agricultural lands, the traditional farming activities continue contemporaneously; the land is not taken out of agricultural production. The presence of the turbines on agricultural land generates various sources of additional income to the landowners. This additional income promotes the long-term retention of agricultural lands by enabling landowners relying on agricultural income to withstand cyclical economic downturns without needing to convert to uses less compatible with agriculture.

Due to wind energy facilities' unique nature, Garfield County has supplemented its Conditional Use Permit requirements by adopting Zoning Ordinance section 1.05.090. The criteria set forth therein include additional permits, pertinent set backs and specific conditions of approval, summarized below.

Applicable Permits

In addition to obtaining a conditional use permit, county road use and right-of-way permits must be obtained prior to road construction. Building permits must be obtained prior to the preparation of any project-related foundations. The proposed Project would obtain all required permits for all project components.

Applicable Setbacks

The setbacks applicable to a wind energy facility are summarized in Table 3-2. As per Chapter 1.01.030 of the Garfield County Zoning Ordinance, the height of a turbine is defined as the "distance measured from the ground level to the highest point on a wind turbine, including the rotor blades". This will be measured as the distance from the ground to the tip of the blade at its highest point.

Table 3-2 Setbacks for Wind Energy Facilities

Element	Required Setback
Highway 12	Outside of the Urban Growth Area: height of the wind energy tower plus 100 feet.
County Roads	From the rights-of-way of all county paved or bituminous-surfaced roads: height of the wind energy tower plus 100 feet. From the rights-of-way of all county gravel or unpaved roads: 100 feet from the closest blade tip of the wind energy tower.
Project Area Boundary	Height of the wind energy tower plus 100 feet, unless waivered.
Residences	Minimum of ¼-mile or four times the height of the wind energy tower, whichever is greater.

The design of the proposed Project, inclusive of road and individual turbine placement, would take into account the setbacks outlined in Table 3-2.

Conditions of Approval

Wind energy facilities must comply with all applicable conditions set forth in Section 1.05.090(8) for the Project during construction and operation. These conditions are grouped into the following categories:

- Construction;
- Water and water runoff;
- Erosion;
- Transportation;
- Plants;
- Animals;
- Recreation;
- Historic and cultural resources;

- Noise and visual;
- Health and safety; and
- Decomissioning.

The Project will comply with the conditions listed above through the preparation of site plans, engineering designs and plans, project specific erosion and sediment control plans and drainage plans, transportation management plan; and will adhere in all respect to permit conditions (i.e., National Pollution Discharge Elimination System); and completion of the necessary environmental analysis associated with the SEPA environmental impact statement.

3.2 Garfield County Critical Areas Ordinance

The Garfield County Critical Areas Ordinance (CAO) is intended to protect the functions of critical areas, which include the following:

- Wetlands;
- Critical aquifer recharge areas;
- Fish and wildlife habitat conservation areas;
- Frequently flooded areas; and
- Geologically hazardous areas.

In addition to the critical areas outlined above, there are three designated natural resources lands that fall within the purview of the CAO:

1. Agricultural Resource Lands
2. Mineral Resource Lands
3. Forest Resource Lands

The Garfield County CAO is applicable to parcels containing designated resource lands or critical areas. Development located in or that is likely to cause impact to resource lands or critical areas must undergo a Resource Lands and Critical Areas Special Study (Study).

Standards and requirements for resource lands are set forth in Section 7-9 of the CAO. Section 10-14 establishes requirements for designated critical areas. The applicable development standards, setbacks and mitigation ratios for critical areas are summarized in Table 3-3.

Table 3-3 Summary of Critical Areas Requirements.

Critical Areas	Requirements
Wetlands	• Regulated activities must be sited, designed, and operated in a manner to protect the value and functions of the wetland • Critical Areas Report required • Area of Review: Within 500 ft. for Category 1 or 2; Within 300 ft. for Category 3; and Within 200 ft. Category 4 Wetlands • Water quality requirements

Table 3-3 Summary of Critical Areas Requirements.

Critical Areas	Requirements
	• Guidance for restoration & replacement, enhancement, and signs & fencing of wetlands • Buffers from Edge of Wetland: Category 1 – 200 ft. min; Category 2 – 100 ft. min; Category 3 – 50 ft. min; Category 4 – 25 ft. min
Critical Aquifer Recharge Areas	• Area of Review: all subject rivers and creeks within 100 ft. of irrigation district main canals and areas of high ground water. • The building inspector may request additional unconfined and general information • Site Assessment Report required • Water quality requirements • Additional development standards • Guidance for wellhead protection as mitigation
Frequently Flooded Areas	• Area of Review: Flash flood areas and areas identified on Federal Emergency Management Agency (FEMA) 100-year flood maps. • General development regulations • Water quality requirements • General and specific standards for flood hazard reductions • Designated floodways with additional prohibitions
Geologically Hazardous Areas	• Area of Review: 200 ft. from any identified hazard per geology report • General requirements for site analysis • Identifies areas that shall be addressed in a critical area report. • Geological Hazard Assessment • Development plans and standards required
Fish and Wildlife Conservation Areas	• Area of Review: 500 ft. from “edge area” determined by the building inspector based on Washington Department of Fish and Wildlife (WDFW) recommendations, and consultation with the applicant and state agencies. • General requirements for site analysis • Requirements for Habitat Conservation Areas • Development Setbacks for WDNR and non-Typed Streams in protected Fish and Wildlife Conservation Areas; 250 ft buffer width from shorelines, 200 ft. buffer width from perennial or fish bearing streams (5-20ft wide), and 150 ft. buffer width from perennial or fish bearing streams less then 5 feet wide as well as intermittent streams and washes

Field surveys completed for the Project will identify the presence of any critical areas or resource areas and the appropriate documentation and consultation with the county will be undertaken.

3.3 SEPA

3.3.1 Introduction to SEPA

The State Environmental Policy Act (SEPA), Chapter 43.21 of the Revised Code of Washington (RCW), requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of defined elements of the built and natural environment. An EIS analyzes the project's impacts on these aspects of the environment, and includes recommended mitigation measures to ameliorate those impacts. SEPA does not require that all impacts be mitigated in order for a project to be approved.

Information provided during the SEPA review process aids agency decision-makers, applicants, and the public in understanding how a proposal will affect the environment. The information gathered can often be used to modify a proposal to reduce likely impacts and can suggest mitigation measures for implementation during construction and operational phases.

The SEPA process typically begins with the submittal of a permit application and a completed environmental checklist to assist the permitting agency in determining the significance of a project's potential impacts. In some circumstances, the project proponent may stipulate that the project will have probable significant impacts to the environment and request issuance of a determination of significance (DS) which mandates preparation of an EIS. The permitting authority (the Lead Agency) bears the responsibility for identifying and evaluating potential environmental impacts of the proposal. To do so, a 30 day public scoping period takes place in which the public is given the opportunity to comment on the elements of the environment which will potentially be impacted by the project. Preparation of the EIS begins thereafter. When the draft EIS is finalized, another 30 day public comment period is held. A final EIS is issued once the comments received have been analyzed and addressed. Figure 3-1 illustrates the primary elements of the SEPA process.

Under SEPA, phased environmental reviews are common for projects where the overall development sequence is from a broad concept to narrower, more specific details [Washington Administrative Code (WAC) 197-11-060(5)(b)]. For example, review of site selection and general development issues can be evaluated up front, and subsequent analysis can be conducted when more information is available on the specific development. In this case, each Construction Phase may result in supplements to existing environmental documents in order to address Project phase-specific environmental issues. The proposed Garfield County Lower Snake River Wind Project will require a phased environmental review to ensure environmental issues at each Construction Phase are adequately addressed.

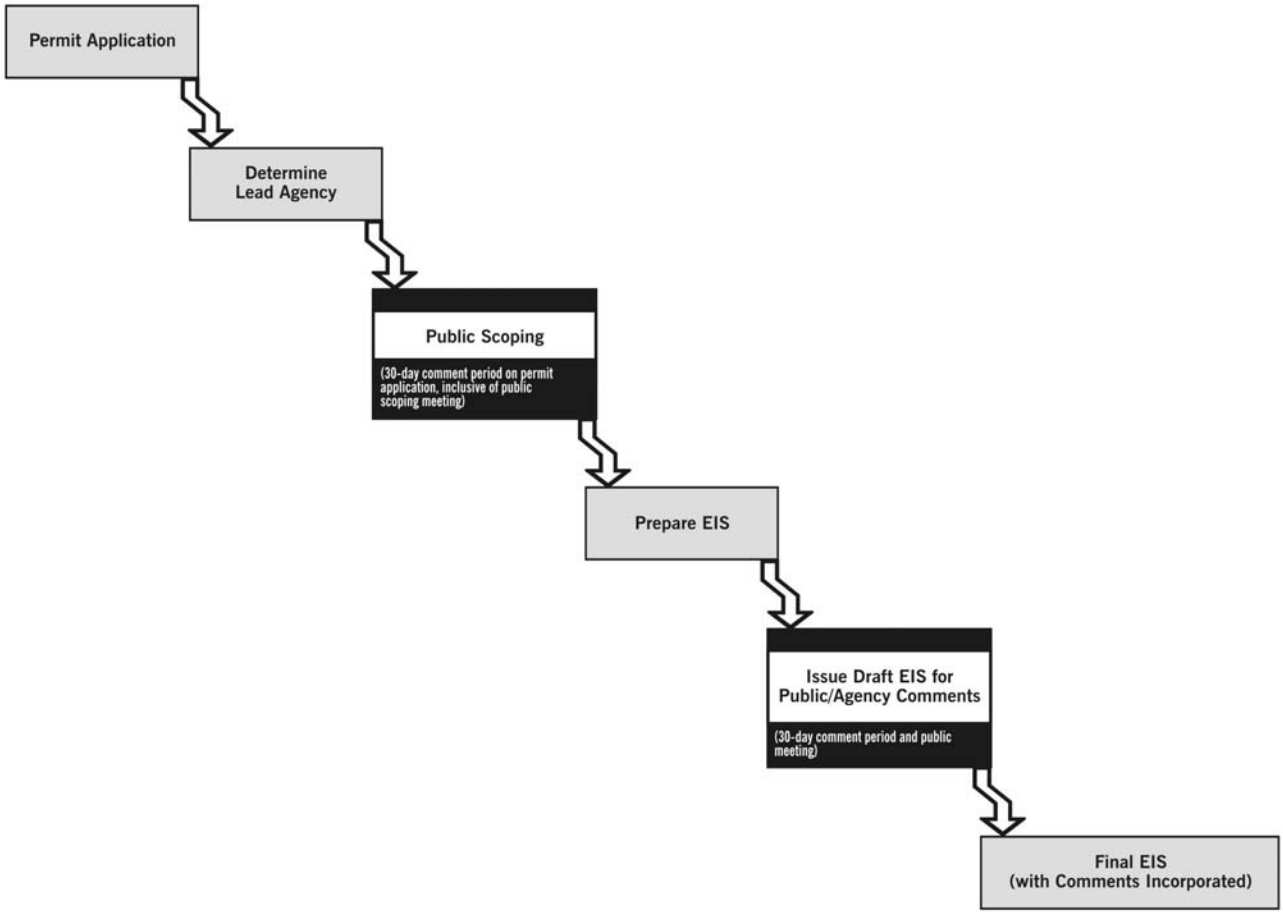


Figure 3-1 SEPA Process Flow Chart

3.3.2 Resources Assessed within a SEPA EIS

Under SEPA, the potential impacts of a proposed action and its reasonable alternatives must be assessed for the following environmental elements:

- Earth (geology and soils);
- Air;
- Water (surface and groundwater);
- Vegetation (habitat for threatened and endangered species);
- Wildlife (habitat for threatened and endangered species);
- Energy and natural resources;
- Environmental health;
- Noise;
- Land use and housing;
- Aesthetics;

- Historic and cultural resources; and
- Infrastructure and utilities.

The methodologies for evaluating impacts to the environmental elements listed above will be refined upon receiving comments from agencies and the public during the SEPA scoping period. In anticipation of application submittal, the Applicant has reviewed agency protocols and has already initiated data collection for some of the environmental elements.