Draft *August 2009*

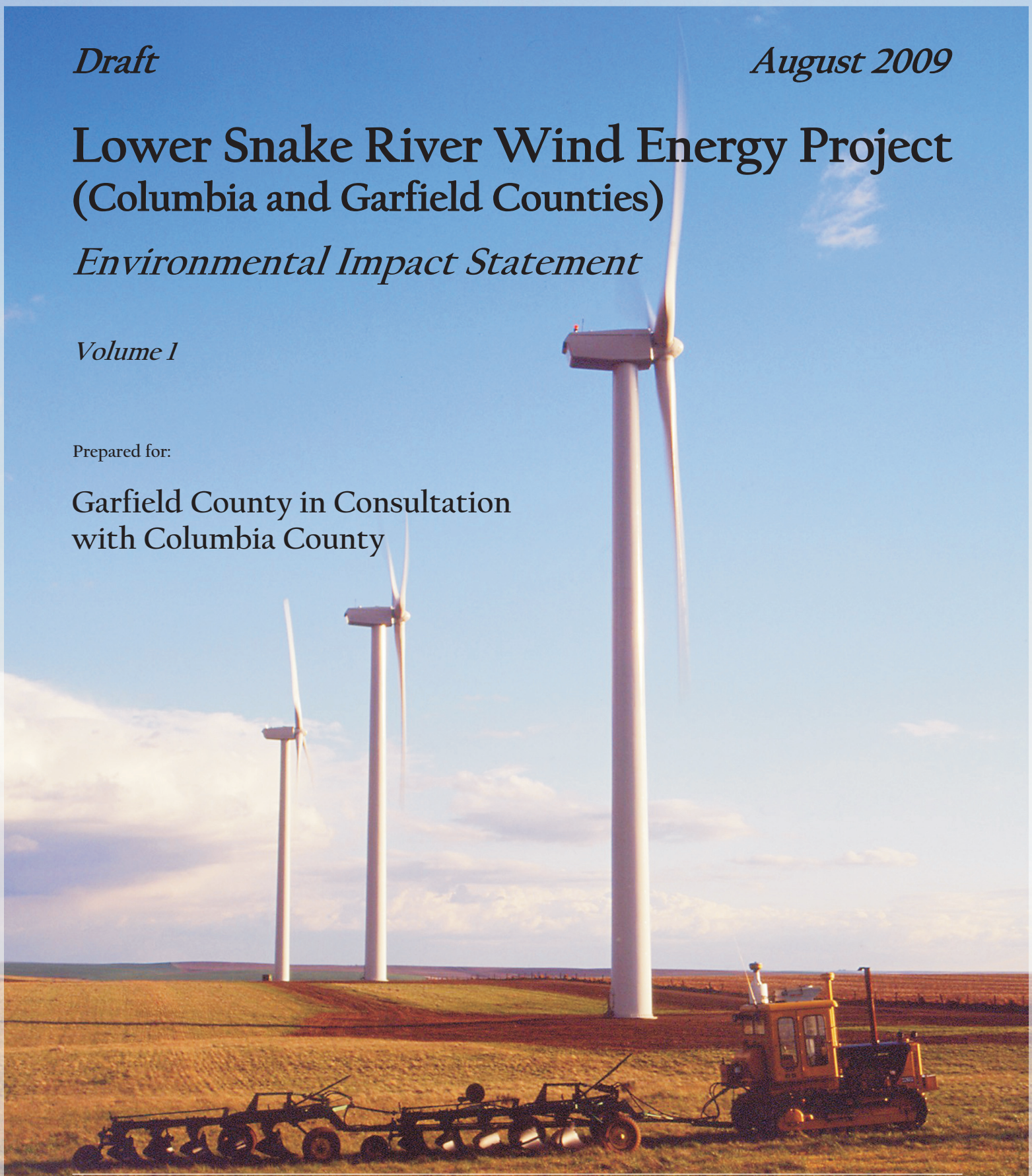
Lower Snake River Wind Energy Project (Columbia and Garfield Counties)

Environmental Impact Statement

Volume 1

Prepared for:

Garfield County in Consultation with Columbia County



Prepared by:

ecology and environment, inc.
International Specialists in the Environment

GARFIELD COUNTY PUBLIC WORKS DEPARTMENT
P.O. Box 160, Pomeroy, WA 99347 – Phone: (509)843-1301, Fax: (509)843-1412

August 17, 2009

Re: Lower Snake River Wind Energy Project Garfield County CUP #012609

Dear Reader:

In accordance with WAC 197-11-435, enclosed for your review is the Draft Environmental Impact Statement ("DEIS") for the proposed Lower Snake River Wind Energy Project. The Applicant, Puget Sound Energy, Inc., has requested to build an approximately 1,432-megawatt, wind turbine electrical generation facility with approximately 795 turbine locations in an area of approximately 124,000 acres in Garfield and Columbia Counties.

This environmental review was triggered by the Applicant's submittal of a Conditional Use Permit ("CUP") application to Garfield County on January 26, 2009, which was deemed complete on February 9, 2009. The Applicant requested that Garfield County issue a Determination of Significance and prepare an Environmental Impact Statement ("EIS") to address impacts in both Garfield and Columbia Counties.

This DEIS is the result of the formal, public EIS scoping process that occurred February 12, 2009 through April 3, 2009. Comments received during this scoping period were considered by Garfield County to determine the issues and alternatives that are analyzed in this DEIS. These environmental issues are briefly listed below.

This DEIS evaluates the impacts associated with two land use alternatives: the *Preferred Alternative* and the *No Action Alternative*. The *Preferred Alternative* is the Applicant's proposed wind generation facility described above; whereas, the *No Action Alternative* presumes the land would remain as currently used. Alternative measures to mitigate impacts from the *Preferred Alternative* are identified within various elements of the environment discussed in Chapter 2. The DEIS analyses the following key environmental issues:

- Natural Environment
  - Geology
  - Soils
  - Water Resources
  - Wetlands
  - Aquatic Habitat, Fish Species, and Wildlife
  - Bird and Bat Resources
  - Vegetation
  - Climate and Air Quality

- Built Environment
  - Visual Resources
  - Noise
  - Public Services and Utilities
  - Traffic and Transportation
  - Land Use and Recreation
  - Socioeconomics
  - Health and Safety
  - Cultural Resources

- Cumulative Impacts

To ensure a complete analysis, Garfield County is asking you to help by reviewing this DEIS and providing comments. **The comment period for this document closes on September 16, 2009.** We have scheduled two public open houses to discuss the findings in the DEIS. These open houses will beheld as indicated below. DEIS comments will be received from August 17, 2009 to September 16, 2009.

DEIS Public Open Houses

September 9, 2009
6pm – 10pm
Pomeroy High School in Pomeroy, WA

September 10, 2009
6pm – 10pm
Seneca Building in Dayton, WA

Please send your written comments to: Garfield County Public Works Department, Planning Division: Walter Grant Morgan, P.E., SEPA Official, PO Box 160, Pomeroy, WA 99347. Comments on this document must be **received by the Public Works Department by 5pm on September 16, 2009**. Garfield County's SEPA Official will review and respond to all comments. Comments received in response to this solicitation, including names and addresses of those who comment, will be considered part of the public record on this proposed action and will be available for public inspection.

For further information regarding this proposal or to request additional copies of this DEIS, you may contact the Grant Morgan, Garfield County's SEPA Official, at (509) 843-1301.

Very truly yours,

Walter G. Morgan

Walter Grant Morgan P.E.
Garfield County Engineer
SEPA Responsible Official
Garfield County

FACT SHEET

Title		Lower Snake River Wind Energy Project, Draft Environmental Impact State (DEIS)	
Brief Description of Proposed Action		Applicant proposes to construct and operate approximately 795 wind turbines that would generate approximately 1,432 megawatts (MW) of wind power in Garfield and Columbia Counties. The proposed project would occupy approximately 124,000 acres. Wind turbines will generally be located along ridge tops to use winds that typically come from the southwest. Supporting infrastructure will include access roads, underground and overhead electric collection system lines, substations, transmission lines, microwave communications, meteorological towers, operations and maintenance centers, and temporary construction access and staging areas. The project will be built in four or more stages.	
Location		South of Pomeroy, north of the Pataha Creek, and between the Pataha Creek and Tucannon Rivers. Detailed maps and tax parcel numbers are available for review at the Garfield County Public Works office listed below.	
Applicant		Puget Sound Energy, Inc.	
Proposed Implementation Date		Construction activities are expected to start during 2010 and last approximately five years. The start of construction depends on the date Garfield County issues a CUP for this project and whether there any appeals associated with the CUP's issuance.	
SEPA Lead Agency		Garfield County Public Works Department P.O. Box 160 Pomeroy, WA 99347 (509) 843-1301	
Responsible Official		Walter Grant Morgan, P.E. Garfield County Engineer Public Works Director	
Contact Person		Garfield County Public Works Department, Planning Division PO Box 160 Pomeroy, WA 99347 (509) 843-1301	
Required Approvals and Certifications		Clean Water Act Section 404 Permit	U.S. Army Corps of Engineers (USACE) – Walla Walla District
		Clean Water Act Section 401 Water Quality Certification	WA Department of Ecology
		National Pollutant Discharge Elimination System (NPDES) Construction General Permit (and State Stormwater Construction General Permit)	WA Department of Ecology
		Sand and Gravel General Permit – Portable Facilities (NPDES and State Waste Discharge General	WA Department of Ecology

		Permit)	
		Hydraulic Project Approval/Joint Aquatic Resource Permit Application	WA Department of Fish and Wildlife
		Well Construction and Operator's License	WA Department of Ecology
		Federal Aviation Administration (FAA) Form 7460: Notice of Proposed Construction or Alteration	Federal Aviation Administration
		General Order of Approval for Concrete Batch Plants	WA Department of Ecology, Eastern Regional Office
		General Order of Approval for Portable Rock Crushers	WA Department of Ecology
		Highway Access Permit	WA Department of Transportation
		Building Permit	Garfield County Public Works; Columbia County Public Works
		Conditional Use Permit	Garfield County Public Works; Columbia County Planning Department
		Right of Way Permit (includes both access and use)	Columbia County Public Works
		Right of Way Use Permit	Garfield County Public Works
		Right of Way Approach Permit	Garfield County Public Works
		Haul Road Agreement	Garfield County Public Works
		Franchise Agreement/Bonding	Columbia County Public Works
		Critical Areas Review/Determination	Garfield County Public Works; Columbia County Planning Department
Authors and Principal Contributors		Ecology and Environment, Inc. is the principal author of the DEIS. SWCA Environmental Consultants prepared the cultural resources inventory and the wetlands and water determination for the proposed project. WEST, Inc. prepared the wildlife baseline studies for the proposed project. Mark Bastasch of CH2M Hill prepared the noise analysis for the proposed project.	
Date of Issuance of the DEIS		August 17, 2009	
Date DEIS Comments are Due		September 16, 2009	
Time and Place of Public Open Houses		September 9, 2009, 6pm-10pm Pomeroy High School in Pomeroy, WA	September 10, 2009, 6pm-10pm Seneca Building in Dayton, WA
Date Final Action is Planned		After Garfield County Public Works deliberates on the Applicant's CUP application and the EIS contents, it will send a recommendation to the Garfield County Hearing Examiner to approve or deny the project (expected in October 2009).	
Subsequent Environmental Review		Final EIS Garfield County Hearing Examiner Hearing	

		JARPA Application Review Bonneville Power Administration's NEPA environmental review process for its new Central Ferry Substation Columbia County will conduct its own environmental review process as it deems appropriate at such time as an application for development of a wind energy facility is sought by Applicant in Columbia County Further environmental review of the specific wind turbine locations will be done during the proposed project's micrositing phase
Cost of DEIS Copy to the Public		There will be no cost for obtaining a CD containing an electronic copy of the DEIS; however, if a hard copy is requested, the cost is $50.00.
Location of Background Information		You may access this DEIS and find additional information about the project on the Garfield County's website at www.co.garfield.wa.us. CDs containing the DEIS are available free of charge at the Garfield County Public Works Department and the Columbia County Planning Department. You may also request a hard copy of the DEIS for the cost noted above at either of these two locations. Hard copies of the DEIS are also available for review at the following locations: the Garfield County Public Works Department Office (19th and Arlington, Pomeroy, WA), the Garfield County Library (856 Arlington, Pomeroy, WA), the Garfield County Auditor's Office (PO Box 278, Pomeroy, WA), the Offices of the Garfield County Commissioners (Garfield County Courthouse), the Columbia County Planning Department (11 S.2d St., Dayton, WA), and the Columbia County Library (111 S.3rd Street, Dayton, WA).

DRAFT Environmental Impact Statement

Lower Snake River Wind Energy Project

August 2009

Prepared for:

Garfield County
P.O. Box 160
Pomeroy, WA 99347

Prepared by:

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Seattle, WA 98104

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List of Abbreviations and Acronyms

Term	Definition
$/MW	dollars per megawatt generated
A-1	Agricultural
AAQS	ambient air quality standards
ADT	Average Daily Trip
aMW	average MW
ANSI	American National Standards Institute
AOP	Air Operating Permit
APE	Area of Potential Effect
API	Asian or Pacific Islander
asl	above sea level
ATV	all-terrain vehicle
Audubon	National Audubon Society Inc.
AWWP	"Access-With-Written-Permission" program
B&Bs	bed and breakfasts
BLC	Broughton Land Company
BLS	Basic Life Support
BMPs	best management practices
BOP	balance of plant
BPA	Bonneville Power Administration
bu/ac	bushels per acre
CAA	Clean Air Act
CAO	Critical Areas Ordinances
CCPT	Columbia County Public Transportation
CEPD	Conservation and Environmental Programs Division
cfs	cubic feet per second

List of Abbreviations and Acronyms (cont.)

CO	carbon monoxide
CO_2	carbon dioxide
CCC	Commodity Credit Corporation
Corps	U.S. Army Corps of Engineers
CPE	Columbia Plateau Ecoregion
CRBG	Columbia River Basalt Group
CRP	Conservation Reserve Program
CTUIR	Confederate Tribes of the Umatilla Indian Reservation
CUP	Conditional Use Permit
CWA	Clean Water Act
DAHP	Department of Archaeology and Historic Preservation
dB	Decibels
DNR	Washington State Department of Natural Resources
DNR	Department of Natural Resources
EAP	Emergency Action Plan
Ecology	Washington State Department of Ecology
EDNA	environmental designation for noise abatement
EIS	Environmental Impact Statement
EMF	Electric and Magnetic Fields
EMTs	Emergency Medical Technicians
EPA	Environmental Protection Agency
EPC	Engineering, Procurement, and Construction
ESA	Endangered Species Act
ESCP	erosion and sediment control plan
EWITS	Eastern Washington Intermodal Transportation Study
FAA	Federal Aviation Administration
FDCP	Fugitive Dust Control Plan
ft	Feet
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FSA	Farm Service Agency

List of Abbreviations and Acronyms (cont.)

FTE	full time equivalent
GCPT	Garfield County Public Transportation
GHGs	greenhouse gases
GIS	Geographic Information System
GLO	General Land Office
GMA	Growth Management Act
gpm	gallons per minute
HBC	Hudson Bay Company
HCM	Highway Capacity Manual
HF	high-frequency
Hg	Mercury
HSP	Health and Safety Plan
HUCs	Hydrologic Unit Codes
HUD	Housing and Urban Development
Hz	Hertz
IBA	Important Bird Area
IRP	Integrated Resource Plan
IWM	integrated weed management
JARPA	Joint Aquatic Resources Permit Application
kV	Kilovolts
LF	low-frequency
m	Meters
mG	Milligauss
mph	miles per hour
MTRs	Military Training Routes
mvm	million vehicle miles
MW	Megawatts
MWh	million megawatt hours
NAAQS	National Ambient Air Quality Standards
NAD	North American Datum
NAICs	North American Industrial Classification Codes

List of Abbreviations and Acronyms (cont.)

NAP	National Academies Press
NEC	National Electrical Code
NEPA	National Environmental Policy Act
NFPA	National Fire Protection Association
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NOI	Notice of Intent
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRC	National Research Council
NRCS	National Resource Conservation Service
NRHP	National Register of Historic Places
NWC	North West Company
NWCC	National Wind Coordinating Committee
NWI	National Wetlands Inventory
NWR	National Wildlife Refuge
NYSERDA	New York State Energy Research and Development Authority
O&M	operations and maintenance
O_3	Ozone
ODFW	Office of Drinking Water
OHW	ordinary high water
OR&N Co.	Oregon Railroad & Navigation Company
OSHA	Occupational Safety and Health Administration
OWR&N Co.	Oregon-Washington Railroad & Navigation Company
Pb	Lead
PHS	Priority Habitats and Species
PM	particulate matter
PM_{10}	particulate matter less than 10 microns in diameter
PPA	Power Purchase Agreement
Program	"Feel-Free-to-Hunt" Program

List of Abbreviations and Acronyms (cont.)

Project	Lower Snake River Wind Energy Project
PSE	Puget Sound Energy Inc.
QA/QC	Quality Assurance/Quality Control
RBD	rotating boom derrick
RCW	Revised Code of Washington
RM	River Mile
ROW	Right-of-way
rpm	revolutions per minute
RPS	renewable portfolio standard
RV	recreational vehicle
SA	Site Assessment
SCADA	Supervisory Control and Data Access
SEPA	State Environmental Policy Act
SMA	Shorelines Management Act
SMP	Shoreline Master Program
SMS	Scenery Management System
SO_2	sulfur dioxide
SPCC	Spill Prevention, Control, and Countermeasure
SPL	sound pressure level
SRs	State Routes
Study	Resource Lands and Critical Areas Special Study
SWPPP	Storm Water Pollution Prevention Plan
TAC	Technical Advisory committee
TIA	traffic impact analysis
TMDL	total maximum daily load
TMP	Traffic Management Plan
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UTM	Universal Transverse Mercator

List of Abbreviations and Acronyms (cont.)

V/C	volume to capacity
VAWTs	vertical axis wind turbines
VDT	Video Display Terminals
VRM	Visual Resource Management
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife
WDNR	Washington Department of Natural Resources
WDOH	Washington Department of Health
WECC	Western Electricity Coordinating Council
WEGs	Wind Energy Groups
WEST	Western EcoSystems Technology Inc.
WHPAs	Wellhead Protection Areas
WQI	Water Quality Index
WRAs	Wind Resource Areas
WRIAs	Water Resource Inventory Areas
WTGs	wind turbine generators
WWTP	wastewater treatment plant
ZOR	zone of risk

Executive Summary

ES.1 Introduction

This draft Environmental Impact Statement (EIS) describes the environmental impacts of the Lower Snake River Wind Energy Project (Project) proposed by the Applicant, Puget Sound Energy Inc. (PSE). The application was originally submitted by Blue Sky, LLC, a subsidiary of RES Americas (RES) and Puget Sound Energy. Since the application was filed, PSE has acquired the entire interest in the Project. For this reason, references to the "Applicant" in this DEIS refer solely to PSE. The Project is a commercial wind farm capable of generating approximately 1,432 megawatts (MW) of electricity proposed for development in Columbia and Garfield counties on approximately 124,000 acres.

This environmental review process, performed under the authority of Ch. 43.21C RCW (State Environmental Policy Act or SEPA), was triggered when the Applicant submitted a Conditional Use Permit (CUP) application to Garfield County on January 26, 2009. At such time when the Applicant seeks to develop portions of the Project in Columbia County, that county will conduct its own permitting process and associated environmental review. This draft EIS addresses impacts in both counties in order to avoid piecemealing of environmental review.

An EIS is an informational and evaluative tool. It does not mandate approval or disapproval of a project, but informs the public and decision-makers as to the potential substantial adverse impacts to both the built and natural environment, and suggests to decision-makers the means by which those impacts could be avoided or reduced through mitigation.

This environmental review evaluates approximately 1,000 wind turbine locations in the Project area. After applying mitigation measures, best management practices (BMPs), and micrositing of the individual Project features, approximately 795 turbine locations will be chosen for installation at the Project.

ES.2 Project Objectives, Purpose and Need

The Project objective is to develop and construct a commercial wind energy facility in Garfield and Columbia counties in Southeast Washington that is commercially viable and meets the energy needs of the region. The Applicant is subject to the requirements of the Washington Energy Independence Act, at RCW 19.285 and needs to obtain mandatory minimum amounts of its energy supply from eligible renewable energy resources. The Applicant's integrated resource

plan relies heavily on the increased use of wind power as a principal component of its future generation portfolio. The combination of economic growth and expiring energy supply contracts means that PSE faces large electricity resource needs in the years ahead. This Project addresses the objectives and purposes stated above, and contributes to meeting the needs of PSE and its customer base.

ES 3 Project Alternatives and Review

This document evaluates two alternatives: the Preferred Alternative (the Project) and the No Action Alternative. Several potential alternatives were considered during the development of this EIS, but were not analyzed in detail because they were not deemed reasonable, or they did not meet the Project objectives.

The direct and indirect Project impacts are addressed, as well as the cumulative impacts of other reasonably foreseeable projects in the two-county area. Impacts of the Project are evaluated for the Construction, Project Facilities' operations and maintenance, and End of Design Life stages of the Project.

One of the results of environmental review is the development of potential mitigation measures whose implementation may avoid or reduce impacts to the built and natural environment, as well as help identify significant unavoidable impacts that cannot be mitigated.

Mitigation measures recommended in an EIS are one tool the Applicant uses to refine the ultimate selection of individual turbine locations. Additional processes that are applied to the final site-specific decisions necessary to reduce the project to a final footprint of approximately 795 turbines include both mitigation measures that are inherent in the design of a wind project, and the process of micrositing.

Mitigation measures that are inherent in a wind project design include standards that are applied to the entire Project. An example of a mitigation measure inherent in a wind project design is siting all project elements to avoid sensitive resource areas such as wetlands, streams, or known cultural resource sites. This principle is applied to the specific streams present in the Project area and informs the design engineering of locations where no Project elements can be placed. This reduces the ultimate number of turbines that can be sited.

Micrositing is the final process of assessing site-specific attributes in order to determine the final locations of wind turbine generators, below-ground electrical cables, and above-ground electrical transmission towers. This process occurs after comprehensive environmental and permit review and prior to actual construction. During micrositing, technical and engineering factors, including limitations posed by the terrain, wind data, (e.g., speed, wind sheer), wake effects of the turbines, feasibility of access, geotechnical considerations (subsurface conditions), environmental restrictions (avoidance of sensitive habitat), cultural/archeological restrictions (avoidance of cultural resources sites), telecommunications constraints, Federal Aviation Administration (FAA) requirements, and other site-

specific criteria are assessed. Based on these site-specific results, further refinement is made to yield a final layout of approximately 795 turbines.

ES 4 Significant Areas of Interest and Issues to be Resolved

Public scoping identified the following significant areas of interest to be considered in this DEIS: impacts to land uses in the area; socioeconomic impacts to the community and the public services afforded the area's citizens; avian and wildlife impacts; visual impacts and noise impacts. The significant issues to be resolved through environmental and permit review include whether the Project would have significant adverse impacts to wildlife populations and hunting uses; whether there would be continued viability of agricultural activities; the level of demands placed on public services; calculation and timing of new revenues to taxing districts and the private sector; whether the Project could be sited to meet Washington's adopted noise level standards, and how the Project will affect the viewscape in the Project vicinity.

ES 5 Mitigation Measures and Significant Impacts that are Unavoidable

A summary table of all recommended mitigation measures is attached as Table ES-1. Major mitigation measures discussed here are reasonably calculated to reduce, at times eliminate, and in several instances, enhance the impacts of the Project to the built and natural environment. The Applicant will work to perform site specific investigations, conduct on-going avian monitoring and will participate in the operation of a Technical Advisory Committee to review the results of wildlife issues as they arise in order to facilitate adaptive management of the area's avian and wildlife resources. The Applicant will work with the various public safety agencies to coordinate emergency response activities. Plans will be developed in consultation with appropriate local officials to address vegetative impacts and control noxious weeds. Evaluation of noise effects will be undertaken in order to site turbines in a manner that complies with the applicable state noise standards. The counties will experience significant increased revenues over the life of the Project, and the private sector (businesses, landowners, and other service industries) will experience a net gain in revenues both directly and indirectly caused by the Project's development and operation. The viewscape will change, in an often significant way that cannot be avoided or mitigated, recognizing that evaluating the alteration of a viewscape is highly subjective and varies from one viewer to another. Avoidance will be utilized to prevent many types of impacts from occurring in the first instance, and Best Management Practices will be applied to minimize impacts where appropriate. Application of these measures, following the micrositing of the Project elements within permitting corridors, will limit and in most instances, eliminate the adverse impacts of the Project.

ES 6 Major Conclusions

This Project will utilize an abundant renewable energy resource to generate up to 1,432 megawatts of electricity for consumers. In doing so, it will also contribute to the Applicant's need to meet the requirements of the Washington Energy Independence Act. Operation of the Project will avoid the consumption of fossil fuels used in the generation of equivalent energy through thermal-based power generation systems, and defers the depletion of non-renewable resources.

The Project will generate significant revenues to taxing districts over the life of the Project while avoiding significant demands being placed on the delivery of public services. New sources of revenue will be generated for the private sector through increased sales and use of services, and the creation of an additional source of income for the Project's landowners.

The Project will have nominal effects on water, wetland and fisheries resources; soils, geology, vegetation; climate and air quality; public services, health and safety, land use patterns, and cultural resources. To the extent permissive hunting has traditionally been allowed on private property within the Project, the Applicant's development of a hunting program fosters continued recreational hunting while supporting appropriate big game management. Well over ninety-nine percent of the counties' actively farmed land will remain under cultivation.

Significant impacts on the area's visual resources cannot be avoided or mitigated. Numerous turbines will be visible from various locations throughout the region. Project facilities can be sited and operated to meet the applicable Washington State noise standards and, as such, noise impacts from the Project are not expected to be significant. The Project will cause avian and bat mortality, although in the context of what is known about those populations, the impacts are not deemed to be significant on total populations of those species. The Project will be subject to continued adaptive wildlife management review, providing monitoring data that may improve wildlife mitigation measures for future wind farm development.

With the exception of impacts to visual resources, implementation of major mitigation measures to the Project will avoid nearly all significant adverse impacts to the built and natural environment and will generate major benefits to the region.

Table ES-1 Summary of Impacts and Mitigation for the Preferred Alternative

Resource	Impact Topics Addressed	Mitigation Measures	Significant and Unavoidable Adverse Impacts
Geology			
	• Impacts associated with seismic effects and volcanic activity • Potential for Project to contribute to slope instability, topographic alterations, and erosion	• Project facilities (turbines, roads, collection systems, and associated facilities) will be sited to avoid potential geologic hazard areas, including those identified in the Counties' Critical Areas Ordinances ("CAO"), slopes greater than 30%, and streamside incision or erosion points. • Project features will be designed and constructed to comply with the performance standards for geologic hazardous areas as specified in Counties' CAOs, seismic design codes, slope protection measures, and BMPs. • Roads will be designed by a certified engineer and constructed to ensure stability and to reduce wind erosion (including use of a minimum of 15 cm of gravel surface for temporary roads). • Project will comply with specifications and BMPs contained in its NPDES permit and Stormwater Pollution Prevention Plan (SWPPP) to reduce erosion potential. • Blasting activities will be conducted by professionally trained and certified explosive experts and will employ industry-standard techniques. • When possible, roads, collector lines, cabling trenches, and communication lines will share construction corridors to minimize ground disturbance. • During the first year following construction and/or until vegetation has been established in disturbed soil, the Project site will be monitored on a regular basis following large rainfall and snow events, and corrective action will be taken if any erosion occurs. • Maintain widened existing roads and new roads through Project's life to limit erosion. When Project facilities are removed, restoration activities could include reclaiming roads, recontouring slopes, grading, ripping compacted areas, filling, excavating, and replanting/reseeding as applicable. Footings and foundations will be removed to a level of 3 feet below the ground surface.	• Mitigation measures inherent in Project design and identified in the EIS, result in no significant unavoidable adverse impacts

Table ES-1 Summary of Impacts and Mitigation for the Preferred Alternative

Resource	Impact Topics Addressed	Mitigation Measures	Significant and Unavoidable Adverse Impacts
Soils			
	• Temporary and permanent soil disturbance • Soil compaction and erosion • Conversion of natural soils to artificial surfaces • Soil contamination	• Project will limit soil disturbance by: (1) using existing roads wherever feasible, rather than building new roads; (2) clearly identifying work areas; (3) minimizing vegetation removal; and (4) during construction of O&M facilities, limit the disturbed area to the size of the O&M yard. • Applicant will site supporting infrastructure so that adjacent WRAs share facilities, thereby reducing the total number of facilities constructed within the Project as a whole. • Applicant will properly engineer any cut-and-fill slopes. • Applicant will restore temporary staging areas and temporary shoulders and turn-around areas to pre-Project condition following construction. • Project will install and apply appropriate erosion control measures during and following construction, including silt fences, straw bales, reseeding, water trucks for dust control, monitoring, etc. • Project will install appropriate roadway drainage to control and disperse runoff. • Applicant will require contractors to use BMPs for handling materials to help prevent spills. • See mitigation measures listed for Geology.	• With mitigation measures identified in the EIS, and mitigation measures inherent in Project design, the Project will have no significant unavoidable adverse impacts

Table ES-1 Summary of Impacts and Mitigation for the Preferred Alternative

Resource	Impact Topics Addressed	Mitigation Measures	Significant and Unavoidable Adverse Impacts
Water Resources			
	• Stormwater runoff effects on water quality • Streambed and stream bank disturbance • Water quality impacts from spills • Water consumption for Project construction and operation • Sedimentation and erosion effects on water quality	• Project will avoid surface water and groundwater identified during micrositing. • Project will adhere to stream buffers and surface water buffers. • Culverts will be installed to facilitate road crossings/road widenings. • Project will adhere to Ecology's *Stormwater Management Manual for Eastern Washington*. • Applicant will prepare an Erosion and Sediment Control Plan (ESCP), including details and locations of BMPs to be implemented. • Applicant will prepare a Stormwater Pollution Prevention Plan (SWPPP) for construction and operation of the Project. • Project's stormwater drainage systems and structural BMPs will be designed to prevent infiltration of liquid contaminants or contaminated runoff into underlying aquifers. • Project will comply with Garfield County CAO requirements and Garfield County Health District for wellhead protection areas/critical aquifer recharge areas. • Project will install and implement sediment and erosion control measures, including, but not limited to, straw mulching and vegetating disturbed surfaces; retaining original vegetation wherever possible; directing surface runoff away from denuded areas; minimizing constructed slope steepness and length to keep runoff velocities low; and maintaining vegetative buffer strips between the affected areas and any nearby waterways. • Excavated materials will be retained for backfilling post-construction and disturbed areas will be brought to natural grade and re-seeded with a native seed mix. • Rock crushers will operate with BMP measures for water runoff. • Project site will be monitored on a regular basis for erosion and corrective action taken as necessary per the Project's NPDES permit requirements. • See mitigation measures listed for Geology and Soils.	• With mitigation measures identified in the EIS, and mitigation measures inherent in Project design, the Project will have no significant unavoidable adverse impacts

Table ES-1 Summary of Impacts and Mitigation for the Preferred Alternative

Resource	Impact Topics Addressed	Mitigation Measures	Significant and Unavoidable Adverse Impacts
Wetlands			
	• Impacts to wetlands and Waters of the United States • Impacts to wetland vegetation	• Using existing developed water sources for construction. • Applicant will locate construction staging areas, stormwater management facilities, roads, underground cables, turbine foundations, transmission poles, and other associated infrastructure outside wetlands and their associated buffers. • Applicant will complete a final wetland delineation after completion of micrositing process and consult with the appropriate state and federal agencies if determination that jurisdictional wetlands may be impacted. • Applicant will minimize the number of stream crossings to the maximum extent possible. • Applicant will conduct a thorough geotechnical analysis of each turbine foundation prior to construction. • Project's clearing and grading activities will be at least 200 feet from all wetlands in the Project area to the maximum extent feasible. • Applicant will evaluate shallow groundwater and impacts thereto and adjust tower locations to avoid impacts when locating Project facilities within the proximity of wetlands. • See mitigation measures listed for Water Resources.	• With mitigation measures identified in the EIS, and mitigation measures inherent in Project design, the Project will have no significant unavoidable adverse impacts

Table ES-1 Summary of Impacts and Mitigation for the Preferred Alternative

Resource	Impact Topics Addressed	Mitigation Measures	Significant and Unavoidable Adverse Impacts
Aquatic Habitat, Fish Species, And Wildlife			
	• Impacts to aquatic habitat • Loss of habitat • Wildlife mortality • Streambed and stream bank disturbances • Loss of riparian vegetation • Temporary displacement of big game	• Project facilities will be located at least 250 feet from the banks of fish-bearing streams, and where avoidance of riparian corridors is not possible, stabilized rock construction access roads will be used. • Applicant will restore temporarily impacted habitat and Project facility footprints after decommissioning to minimize permanent impacts to wildlife. • Project facilities will be constructed in phases to minimize the amount of area impacted by construction thereby minimizing impacts to burrowing wildlife. • Applicant will implement proper drainage, erosion control plans, and stormwater management practices during the operation of the Project, avoiding impacts on fish and fish habitat downstream of the Project area. • In areas documented as winter range habitat for big game species, the maximum amount of heavy construction, including road and foundation construction and blasting, will occur between April 15 and November 15, outside the critical winter periods. • WDFW and the permitting authority will be consulted and involved with respect to managing the big game populations in the Project area during the construction and operations of the Project. • Consultation with Columbia and Garfield Counties to ensure compliance with their respective CAOs. • Establish a Technical Advisory Committee (TAC) as described in Bird and Bat Resources mitigation. • Applicant will implement appropriate recommendations provided in the WDFW Wind Power Guidelines (April 2009). • See mitigation measures listed for Water Resources, Wetlands, and Bird and Bat Resources.	• With mitigation measures identified in the EIS, and mitigation measures inherent in Project design, the Project will have no significant unavoidable adverse impacts
Bird And Bat Resources			
	• Temporary and permanent loss of habitat • Disturbance and/or displacement of avian and bat species • Avian/bat mortality	• Establish a Technical Advisory committee (TAC) for the Project to formulate and review the results of wildlife monitoring studies. • The duration and scope of the post-construction monitoring program will be recommended to the appropriate permitting authority by the TAC through consultation with a qualified biology consultant familiar with the impacts on birds and bats at wind energy projects. • A raptor nesting survey will be conducted in the appropriate season prior to each phase of construction to identify active raptor nest sites in the vicinity of the Project. Disturbance will be minimized during construction within ¼ mile of any active Federal or State threatened or endangered raptor nest. • Construction personnel will avoid driving over or otherwise disturbing areas outside the designated construction areas.	• With mitigation measures identified in the EIS, and mitigation measures inherent in Project design, the Project will have no significant unavoidable adverse impacts

Table ES-1 Summary of Impacts and Mitigation for the Preferred Alternative

Resource	Impact Topics Addressed	Mitigation Measures	Significant and Unavoidable Adverse Impacts
		• Applicant will designate an environmental monitor during construction to monitor construction activities and ensure compliance with mitigation measures. • Applicant will implement a wildlife incident reporting and handling system (WIRHS), which will be modeled after the system in place at the Hopkins Ridge project. • Implement the appropriate recommendations for impact avoidance and minimization provided in the Washington Department of Fish and Wildlife Wind Power Guidelines (April 2009).	
Vegetation			
	• Introduction/increase in noxious weed species • Vegetation removal and habitat loss	• Consultation with county weed management authorities for the development of a Project vegetation management plan prior to construction and implementation of construction weed management and revegetation activities to prevent weed spread and the introduction of new weed populations. • Integrated Weed Management control techniques appropriate to individual species and specific sites within areas impacted by the Project will be developed and employed in consultation with the appropriate county Weed Coordinators. • Applicant will monitor known weed populations and check for new introductions within restored areas on a regular schedule throughout post-construction growing seasons. • Application of the mitigation ratios contained in the WDFW Windpower Guidelines (April 2009) will be imposed post-construction. • Studies will be completed prior to Project ground disturbance activities to identify sensitive and special status species to be avoided by Project design and micrositing. • The Applicant will implement post-construction weed management, including eradication of incipient weed populations, suppression of existing populations, and restoration of temporarily disturbed existing plant communities.	• With mitigation measures identified in the EIS, and mitigation measures inherent in Project design, the Project will have no significant unavoidable adverse impacts
Visual Resources			
	• Permanently changed views from residential, recreational, and roadway viewpoints • Light and glare impacts • Cumulative visual impacts of wind energy in the region	• Most of Project's collector systems will be buried underground; however, where this is not feasible, portions may be carried overhead. • Sensors and switches will be used to keep lights off on Project facilities when not required. • Mitigation for Project lighting will be determined through consultation with FAA during the micrositing process. An effort will be made to limit or minimize the visual effects of lighting, to the maximum extent possible in compliance with FAA requirements. • Project lights typically used to meet FAA requirements will to some extent be shielded from ground level view due to a constrained (3-5 degree) vertical beam. • Turbine towers will be painted white with anti-reflective paint to avoid daytime lighting and reduce glare of the wind turbines.	• No mitigation measures are available which would minimize or eliminate significant unavoidable adverse impacts (refer to Section 2.10 for further discussion)

Table ES-1 Summary of Impacts and Mitigation for the Preferred Alternative

Resource	Impact Topics Addressed	Mitigation Measures	Significant and Unavoidable Adverse Impacts
Noise			
	• Noise impacts from the construction and operation of the Project	• Implement work-hour controls so that noise-generating activities occur between 7 a.m. and 10 p.m., to the maximum extent possible • Minimize the number of heavy-duty haul trucks traveling through the area during nighttime hours. • Do not allow haul trucks to park and idle within 100 feet of a residential dwelling. • Maintain equipment in good working order and use adequate mufflers and engine enclosures. • Coordinate construction vehicle travel to reduce the number of passes by sensitive receivers. • Compliance with Garfield and Columbia Counties' setback standards • Compliance with State of Washington noise standards (WAC Chapter 173-60) treating residences within the Project Area as Class A receptors.	• With mitigation measures identified in the EIS, and mitigation measures inherent in Project design, the Project will have no significant unavoidable adverse impacts

Table ES-1 Summary of Impacts and Mitigation for the Preferred Alternative

Resource	Impact Topics Addressed	Mitigation Measures	Significant and Unavoidable Adverse Impacts
Climate And Air Quality			
	• Construction and operational impacts on air quality (i.e., particulates/fugitive dust and vehicle emissions) • Greenhouse gas emissions	• Development of a dust control plan (FDCP) identifying all fugitive dust sources and dust control methods and compliances with FDCP's requirements. • Construction to be completed in phases, minimizing disturbed areas. • Stockpiles of soil will be covered with wind-impervious fabric to prevent airborne dust. • All vehicles used during construction will comply with applicable federal and state air quality regulations for tailpipe emissions. • Carpooling among construction workers will be encouraged. • When in operation, vehicles will limit engine idling time and equipment will be shut down when not in use. • Limit traffic speeds to the posted speed limits to minimize the generation of dust. • Add surface gravel to reduce the source of dust emission. • Encourage the use of alternate, paved roads, where available. • Water or dust palliatives to be applied as necessary to control road dust from construction vehicles within 500 feet of residences and also to temporary access roads and cleared areas. • Adherence to county dust abatement processes and use of locally approved dust suppressant chemicals. Excessive and repeated applications of dust suppressant chemicals will be avoided, and the application of such chemicals will be timed to avoid or minimize their wash-off by rainfall or irrigation. • Maintaining permanent graveled access roads in compliance with county regulations. • Compliance with fugitive dust control plans and BMPs for concrete batch plants and portable rock crushers. • Project will obtain Temporary Air Quality Permits for concrete batch plants. • See mitigation measures in Geology and Soils.	• With mitigation measures identified in the EIS, and mitigation measures inherent in Project design, the Project will have no significant unavoidable adverse impacts

Table ES-1 Summary of Impacts and Mitigation for the Preferred Alternative

Resource	Impact Topics Addressed	Mitigation Measures	Significant and Unavoidable Adverse Impacts
Public Services And Utilities			
	• Increase in demand for public services (police, emergency services, medical services, education) • Increased response time for emergency services • Impacts related to wastewater and solid waste generation	• Facility personnel will complete regular emergency response and safety training. • Preventative safety measures will be employed to reduce the risk of fires or to safely contain a fire if one should occur. Lightning protection systems will be installed in all turbines and towers to reduce the risk of a lightning-caused fire. • Discussions with local fire districts prior to construction for ongoing fire protection services during construction and operation of the Project. • Preparation of onsite emergency plans, including an Emergency Action Plan, a Fire Prevention Plan, and an Operational Safety Program. Measures in these plans might include: providing detailed maps to local fire and emergency services districts showing all Project access roads, use of spark arrestors on all power equipment during extremely dry conditions when the wildfire risk is elevated; carrying fire extinguishers in construction and maintenance vehicles; and maintaining a water supply or water tender at one or more locations on-site to improve the effectiveness of fire fighting. Such plans will comply with Counties' development standards. • Project will provide its own onsite security to be present during construction and operations. • Junction boxes will be constructed with a graveled footprint for fire protection and maintenance. • Sanitary wastes will be collected in portable toilets during construction. Disposal of sanitary wastes will be managed through a contract with a portable toilet waste vendor. • Onsite septic systems will be installed at O&M facilities. The Applicant will consult with the Garfield County Health District and obtain any required permits prior to construction. • Hazardous materials will be disposed of in accordance with all applicable state and federal laws and regulations. • A private contractor will be hired to transport construction debris to a regional landfill for disposal. • If Project is decommissioned, waste material will be recycled, disposed of onsite, or taken to a regional facility for disposal. • See mitigation measures listed for Health and Safety.	• With mitigation measures identified in the EIS, and mitigation measures inherent in Project design, the Project will have no significant unavoidable adverse impacts

Table ES-1 Summary of Impacts and Mitigation for the Preferred Alternative

Resource	Impact Topics Addressed	Mitigation Measures	Significant and Unavoidable Adverse Impacts
Traffic And Transportation			
	• Impacts related to additional traffic trips generated by Project • Impacts on roadways related to construction and delivery of oversized loads • Impacts related to road maintenance and public access • Damage to roadways	• Prior to construction, required road agreements (including Haul and Franchise Agreements) will be prepared in consultation with local and state agencies to address impacts from transporting large equipment to the site. Additionally any bonding requirements will be met prior to construction. • Pilot cars will be used as WSDOT dictates, depending on load size and weight. • Where construction may occur near the roadway, one travel lane shall be maintained at all times. • Provision for advance notification to emergency providers, and hospitals when public roads may be partially or completely closed. • Development of protocols for passage of emergency vehicles. • Coordination of traffic control requests through the WSDOT South Central Region's Traffic Engineer. • Compliance with seasonal road restrictions as instituted by Garfield and Columbia Counties. • Adherence to FAA guidelines for a wind turbine and meteorological tower lighting and warning system. • New road construction and upgrades to existing roads will be done according to Garfield and Columbia county ordinances and through approval of the respective county engineers and public works directors. • Applicant will develop a Site Access Plan that directs construction and maintenance workers to use existing roads wherever possible. • Access to new, Project-related roads will be solely from county and private roads and not from U.S. Route 12. • During construction of temporary access roads, the topsoil will be stripped and stockpiled for restoration once construction is complete. • Develop a Haul and Approach Route in coordination with and approved by the appropriate jurisdictional authorities. • New road construction and improvements to existing roads will be done according to county ordinances and through approval of the county engineers. • Restoration of all temporary roads, temporary shoulders, and disturbed areas to their original condition upon completion of construction. • Implement traffic controls to minimize traffic delays to recreation users. • Permanent roads will be maintained for the life of the Project. • Restrict use by tracked vehicles and heavy trucks to prevent damage to road surface and base.	• With mitigation measures identified in the EIS, and mitigation measures inherent in Project design, the Project will have no significant unavoidable adverse impacts

Table ES-1 Summary of Impacts and Mitigation for the Preferred Alternative

Resource	Impact Topics Addressed	Mitigation Measures	Significant and Unavoidable Adverse Impacts
Land Use And Recreation			
	• Impacts related to land disturbance • Temporary curtailment of hunting in Project area • Temporary access delays to recreation sites • Agricultural land impacts • Project's consistency with existing zoning regulations	• Establishment of a hunting program similar to other existing programs (i.e., Hopkins Ridge and Wild Horse). Rules may include prohibiting access within 300 feet of wind turbines or substations, restriction of vehicle traffic to normally travelled county roads, adherence to Washington State Game Rules and Regulations, etc. • Encourage landowners within the Project area to continue to allow hunting in the Project area by assisting with the development of written agreements to be signed with interested hunters, and the development of maps depicting property boundaries, Project facilities/improvements, and suggested hunting buffer zones around Project facilities/improvements. • Work with WDFW and landowners within the Project area to add opportunities for hunting. • Cooperatively work with WDFW on managing big game populations in the Project. • Coordinate with landowners regarding co-location of facilities on farmland thereby leading to better placement and beneficial impacts for farmland. • Coordinate with landowners to address restoration of land for agricultural production. • See mitigation measures in Traffic and Transportation.	• With mitigation measures identified in the EIS, and mitigation measures inherent in Project design, the Project will have no significant unavoidable adverse impacts
Socioeconomics			
	• Increases in population growth • Increases in employment opportunities and wage/payroll impacts • Long-term positive revenue growth with some potential for short-term reduction in state equality payments for schools • Changes to the tax base • Agricultural impacts	• Coordination between the Applicant and counties and school district officials will be maintained so that the counties and school districts are aware of the likely dates of Project phase completion and the assets are commissioned and become part of the tax rolls.	• With mitigation measures identified in the EIS, and mitigation measures inherent in Project design, the Project will have no significant unavoidable adverse impacts

Table ES-1 Summary of Impacts and Mitigation for the Preferred Alternative

Resource	Impact Topics Addressed	Mitigation Measures	Significant and Unavoidable Adverse Impacts
Health And Safety			
	• Fire/explosion risk due to construction and/or operation of Project • Spill potential during Project construction • Acts of vandalism on Project site • Increased traffic accidents as a result of construction • Risks associated with Tower structure failure and ice-throw • Health risks associated with electromagnetic fields, shadow flicker and other health-related concerns	• Project components will be sited in compliance with County setback requirements for residences, property lines, and roads. • Applicant will prepare a Project Health and Safety Plan, which guides responses in the case of a medical emergency and other structural and behavioral issues related to safety. • Applicant will prepare an Emergency Response Plan and a Fire Mitigation Plan. • The turbines include several inherent safety features (i.e., to fully independent braking systems) that provide increased fire protection and reduce the possibility of health and safety risks. • Applicant will prepare of a Spill Prevention, Control, and Countermeasures Plan, which ensures that the risk of an accidental release of hazardous materials remains low throughout Project construction and operation. • Applicant will complete a Phase I Environmental Site Assessment (ESA) for the Project site. If the ESA reveals the presence or potential presence of any environmental contamination on the Project site that exceed Ecology cleanup levels, the Applicant will coordinate with Ecology to determine the measures to be taken. • Applicant will prepare a site security plan to limit access and prevent vandalism. • The wind turbines will meet international design and manufacturing safety standards for tower, blade, and generator design, and be certified by a professional engineer. Quality Assurance/Quality Control (QA/QC) inspections will be conducted. • Training of staff to recognize the hazards of ice throw. • Turbines will be shut down at speeds exceeding 56 mph. • See mitigation measures listed for Traffic and Transportation.	• With mitigation measures identified in the EIS, and mitigation measures inherent in Project design, the Project will have no significant unavoidable adverse impacts
Cultural Resources			
	• Disturbance of archaeological or historical sites • Inadvertent discovery of cultural resources during construction	• A pedestrian survey (inventory) of the environmental permitting corridors should be conducted prior to any ground disturbance associated with the Project to document all archaeological sites located in the Project area. Avoidance of archaeological sites is the preferred method of mitigation; sites that cannot be avoided must be evaluated for eligibility to be listed on the NRHP. The DAHP and local tribes must be consulted on appropriate mitigation for sites that cannot be avoided. • A cultural resources sensitivity training for personnel working on Project construction should be conducted. • During Project construction all sites that have been determined to be eligible for the NRHP must be avoided; coordination of avoidance will be by onsite environmental manager knowledgeable of the resource boundaries. • Upon the discovery of human remains, work within 200 feet of the discovery will cease; the	• With mitigation measures identified in the EIS, and mitigation measures inherent in Project design, the Project will have no significant unavoidable adverse impacts)

Table ES-1 Summary of Impacts and Mitigation for the Preferred Alternative

Resource	Impact Topics Addressed	Mitigation Measures	Significant and Unavoidable Adverse Impacts
		local law enforcement and county coroner will be notified. If the remains are determined to be associated with an archaeological site, the DAHP, and affected tribes will be notified. Appropriate measures will be taken to ensure the site is protected from further disturbance until a treatment plan is agreed upon by all involved parties. • Upon the discovery of previously unrecorded cultural resources all work in the area will stop within 200 feet of the discovery. DAHP and the affected tribes will be notified within 24 hours of the find. • Applicant will encourage participation of the Confederate Tribes of the Umatilla Reservation (CTUIR) and the Nez Perce Tribes in the cultural resources inventory. Tribes will be updated on the status of Project on a mutually agreed upon interval.	

1 Environmental Impact Statement Summary

1.1 How to Use this Document

Chapter 1 describes the Project. The Project objectives, purpose, and need are addressed (Sections 1.2 and 1.3). The facilities and land development that comprise the Project and an overview of the construction activities that will be implemented are presented (Section 1.4). Chapter 1 also describes in detail the Preferred and No Action alternatives (Section 1.6).

Chapter 2 presents the analysis of environmental impacts. Chapter 2 begins with an overview of the impact assessment methodology and process, including how cumulative impacts are assessed (Section 2.1). The analysis of environmental impacts is presented for 16 elements of the natural and human environment (Sections 2.2 through 2.17). These sections describe the affected environment, or current conditions in the Project area, to provide the reader with context for the impact analysis. The impact analysis describes the effects associated with the Project. Direct, indirect, and cumulative impacts are assessed for construction, operation, and end of design life of the Project. Mitigation measures that can reduce, or eliminate identified impacts are presented within each resource section. A summary table of mitigation measures is included in the Executive Summary. At the end of each Chapter 2 section, significant and unavoidable impacts for each element of the environment are identified.

Chapter 3 identifies the required permits and approvals for the Project. Included are local, state, and federal permits that may be required for the Project to be constructed and operated.

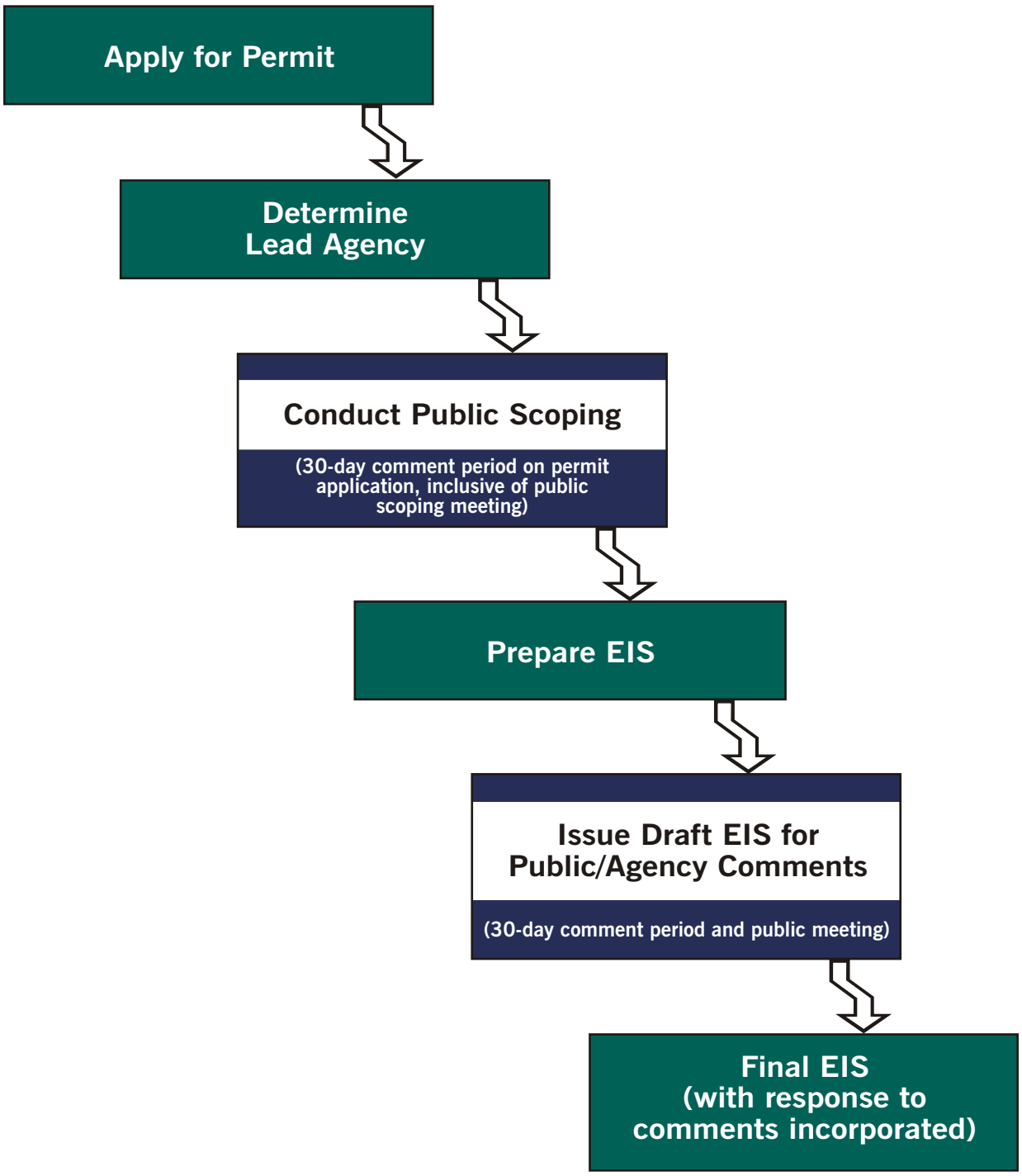
1.2 Introduction

This chapter describes the Lower Snake River Wind Energy Project (Project) proposed by the Applicant, Blue Sky Wind LLC and Puget Sound Energy Inc. (PSE). Since filing the application, PSE has acquired the entire interest in the Project that is the subject of this application and in this document reference to the Applicant means reference to PSE. The chapter includes information on the Project site and location, facilities, construction activities, operation and maintenance activities, mitigation inherent in the Project design, and decommissioning. Alternatives for this analysis are the Preferred Alternative and the No Action Alternative. The proposed Project is a commercial wind farm. The Applicant has elected to proceed with local government review and permits to construct the wind farm, rather than to seek approval from EFSEC. This

environmental impact statement is, therefore, being prepared pursuant to Chapter 43.21C RCW and WAC Chapter 197-11 and not the EFSEC SEPA rules found in WAC Chapter 463-47. While the Project includes proposed wind turbine locations in both Garfield County and Columbia County, the first conditional use permit has been filed for turbines in Garfield County. For that reason, Garfield County has assumed lead agency status pursuant to WAC 197-11-050. Columbia County agrees that Garfield County is the appropriate SEPA Lead Agency. Pursuant to those SEPA rules, the Applicant is conducting an environmental review of approximately 1,000 wind turbine locations in the Lower Snake River Project area. After applying mitigation measures and best management practices (BMPs), approximately 795 turbine locations will be chosen in an area of approximately 124,000 acres under the Applicant's control in Columbia and Garfield counties. The Project will have a total capacity of approximately 1,432 megawatts (MW).

SEPA provides a way to identify possible environmental impacts that may result from governmental decisions, such as the Garfield County Conditional Use Permit (CUP) for the Project. The SEPA process typically begins when an application is submitted to an agency for the construction of a private project (see Figure 1-1).This environmental review was triggered by the Applicant's submittal of a CUP application to Garfield County on January 26, 2009, which was deemed complete on February 9, 2009. The Applicant requested that Garfield County, as lead agency, issue a Determination of Significance and prepare an Environmental Impact Statement (EIS) including cumulative impacts associated with wind energy development in the proposed Project area. At such time when the Applicant seeks to develop any wind energy facilities in Columbia County, as described in this document, Columbia County will conduct its own permitting process and associated SEPA review. It is anticipated that Columbia County will consider the information contained in this EIS as part of its environmental review for Columbia County permits.

SEPA requires evaluation of probable significant adverse impacts of a proposal such as this wind farm project. For projects of this scope, SEPA requires preparation of a draft and final environmental impact statement (DEIS and FEIS, respectively). Public scoping is an integral part of the SEPA process, and is done to assist in identifying key issues for evaluation in the EIS. Scoping for the Project was conducted to obtain public and agency comment on the significant environmental aspects of this Project. Public open house meetings were held on March 4 and 5, 2009, in Pomeroy and Dayton, Washington, respectively. Following the review of the scoping comments received, Garfield County issued a letter on April 23, 2009, that summarized the more significant EIS scope issues. In addition to those issues, all other statutory elements of the built and natural environment are assessed herein.



SEPA	State Environmental Policy Act
EIS	Environmental Impact Statement

Figure 1-1
SEPA Process Flow Chart

Lower Snake River Wind Energy Project

Columbia & Garfield Counties
Washington

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The Applicant has presented for environmental analysis an indicative layout that includes approximately 1,000 turbines. An environmental permitting corridor has been defined around all Project facilities within which the environmental analysis is focused. Final precise siting of all Project facilities, including identifying the footprint sites for the approximately 795 turbines, will occur within the environmental permitting corridors through micrositing, after additional site-specific review.

Micrositing is the process of assessing site-specific attributes in order to determine the final locations of wind turbine generators, below-ground electrical cables, and above-ground electrical transmission towers. This process occurs after comprehensive environmental and permit review and prior to actual construction. All final locations must be within the environmental permitting corridors and study areas reviewed and approved by the counties. During micrositing, the applicant will typically balance a number of technical and engineering factors, including limitations posed by the terrain, wind data (speed, wind sheer, and so forth), wake effects of the turbines, feasibility of access, setbacks (internally established or based on permit requirements), geotechnical considerations (subsurface conditions), environmental restrictions (avoidance of sensitive habitat), cultural/archeological restrictions (avoidance of cultural resources sites), telecommunications constraints (line-of-sight microwave paths), Federal Aviation Administration (FAA) requirements, and other site-specific criteria that are not fully resolved until final engineering is completed.

The DEIS (this document) analyzes impacts and recommends mitigation. The DEIS is circulated for public and agency review and comment. Appendix A provides the distribution list for the DEIS. The DEIS comment period starts on the date the Notice of Availability is issued by Garfield County and ends thirty calendar days thereafter. During the comment period, the public and agencies will be invited to two additional public open house meetings, at which time the authors of the DEIS and Garfield County will be available for questions. The FEIS is prepared after the close of the comment period to respond to each comment that is submitted during the comment period. Depending on the comments received, the FEIS may contain clarifications or additional environmental analysis. The analysis contained in the DEIS and the FEIS, collectively, constitute the required environmental review under Chapter 43.21C RCW and WAC 197-11.

SEPA provides the government decision maker (i.e., Garfield County) with information and the authority to impose reasonable conditions to mitigate impacts from the project. If the decision maker determines, through the SEPA evaluation, that a proposal has too many significant unavoidable adverse impacts that cannot be mitigated, the decision maker may have the authority to deny the proposal. SEPA, however, does not require the local government to deny a project simply because it has adverse impacts (or even significant adverse impacts) as compared to the no action alternative. SEPA is intended to ensure that the government's review of a proposed action includes disclosure of and careful consideration of

probable significant adverse impacts and the potential to mitigate those impacts through conditions or project modification (e.g., micro-siting final turbine locations), before making a decision on the permit. This document provides the analysis required for Garfield County to consider those impacts and mitigation measures.

Once the FEIS is complete, Garfield County will commence the local conditional use permit review, taking into consideration the information contained in the DEIS and FEIS, together with evidence and testimony presented by agencies and members of the public during that public hearing process for the conditional use permit.

1.3 Project Objectives

The objective of the Project is to develop and construct a commercial wind energy facility in Garfield and Columbia counties in Southeast Washington that is commercially viable and meets the energy needs of the region.

1.4 Project Purpose, Need, and Resource Planning

1.4.1 Resource Planning

The future need for power in the Northwest is outlined in forecasts of the Pacific Northwest Electric Power and Conservation Planning Council. The medium forecast predicts electricity demand to grow from about 19,000 average MW (aMW) in 2007 to 27,500 aMW by 2030. This is an average annual growth rate of 1.6% per year (Pacific Northwest Electric Power and Conservation Planning Council 2009). Future energy demands for PSE are summarized below.

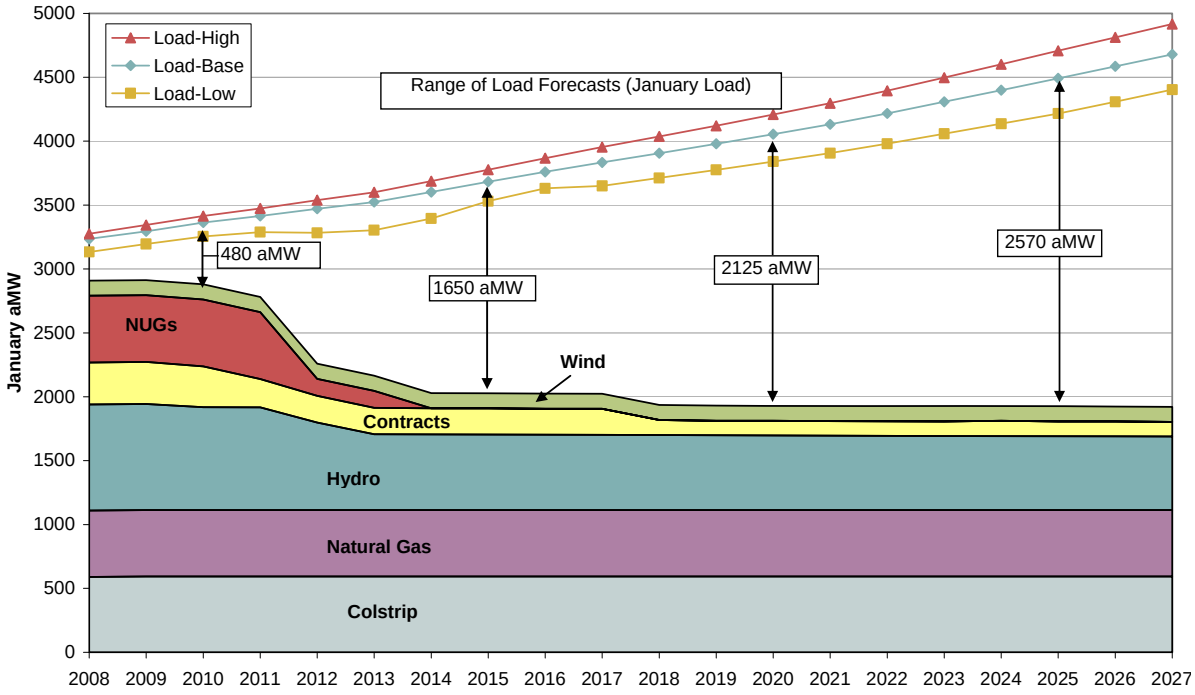
In addition to the growing energy demand, Chapter 19.285 RCW set annual renewable energy targets for "qualifying utilities" (those with more than 25,000 customers) in Washington State. Each qualifying utility can use eligible renewable resources or acquire equivalent renewable energy credits or a combination of both to meet the following annual targets:

- 3% of its load by 2012
- 9% of load by 2016
- 15% of load by 2020 and each year thereafter

Eligible renewable resources include wave, ocean, tidal, wind, solar, or geothermal energy; landfill gas; gas from sewage treatment facilities; biodiesel; and biomass energy. The electricity must be generated by facilities in the Pacific Northwest, or it must be delivered in real time to Washington State. Incremental improvements in hydropower facilities and power generated in irrigation pipes or canals without increasing impoundments or diversions are also eligible renewable resources. Tradable credits equivalent to one MW-hour generated from eligible renewable resources can also be used to meet the targets.

The 2007 Integrated Resource Plan (IRP) prepared by PSE describes how future energy needs will be met with the lowest reasonable cost combination of resources over the next 20 years. The 2007 IRP describes the least carbon-intense range of energy resources PSE has ever proposed as being least cost. It includes investment in energy efficiency as a significant and cost-effective contribution to meeting resource needs and relies heavily on increased development of wind power and gas-fired generation.

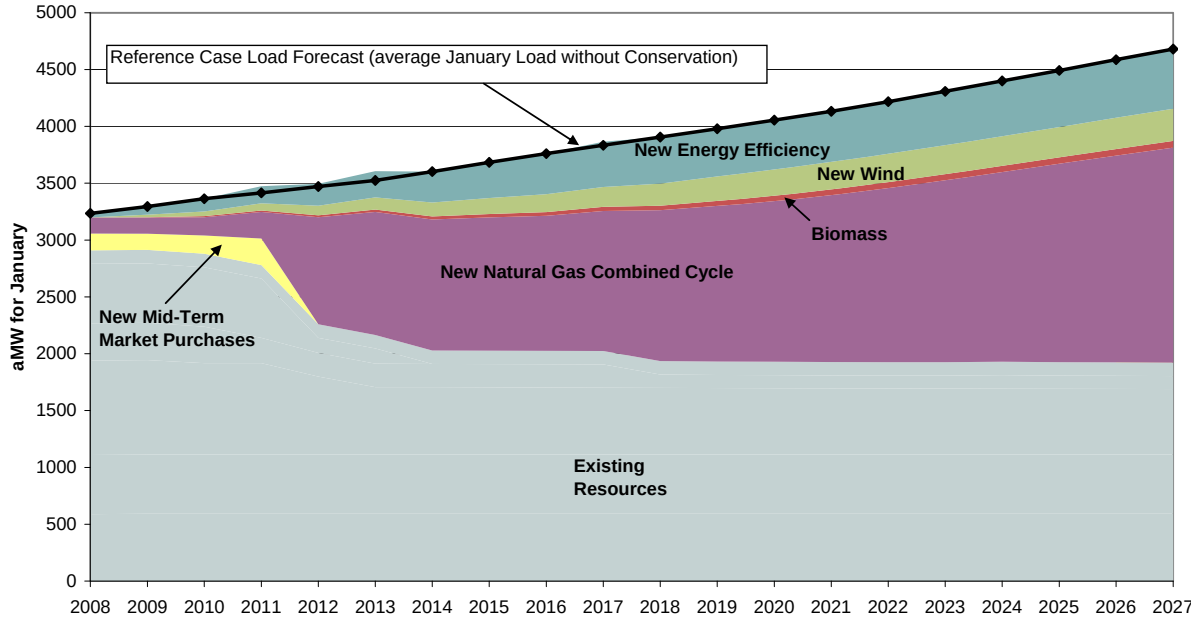
The combination of economic growth and expiring energy supply contracts means that PSE faces large electricity resource needs in the years ahead. To meet the projected electricity demand, PSE will need to replace, renew, and acquire nearly 700 aMW of electricity resources by 2011, more than 1,600 aMW by 2015, and 2,570 aMW by 2025, as Figure 1-2 illustrates.



Key:
aMW = average megawatts
NUGs = non-utility generator
PSE = Puget Sound Energy, Inc.

Figure 1-2 Comparison of Project Loads and Existing Resources for PSE, 2008–2027

Figure 1-3 illustrates the lowest reasonable cost long-term resource strategy proposed by PSE to meet the growing demand for electricity in its service area. The PSE strategy increases demand-side resources (primarily energy efficiency), acquisition of wind resources, and gas-fired generation.



Key:
aMW = average megawatts
PSE = Puget Sound Energy, Inc.

Figure 1-3 PSE's Preferred Electric Resource Strategy

The proposed Lower Snake River Wind Energy Project would significantly contribute to meeting the demand-side energy resource needs identified in the IRP.

1.4.2 Project Purpose and Need

The purpose of the Project is to build a commercially viable wind energy facility to meet future energy demand in the Pacific Northwest and help meet the requirements of the Washington Energy Independence Act, [Chapter 19.285 Revised Code of Washington (RCW)]. The Project will have a total capacity to generate and deliver approximately 1,432 MW from eligible renewable resources as defined in RCW 19.285.030(18).

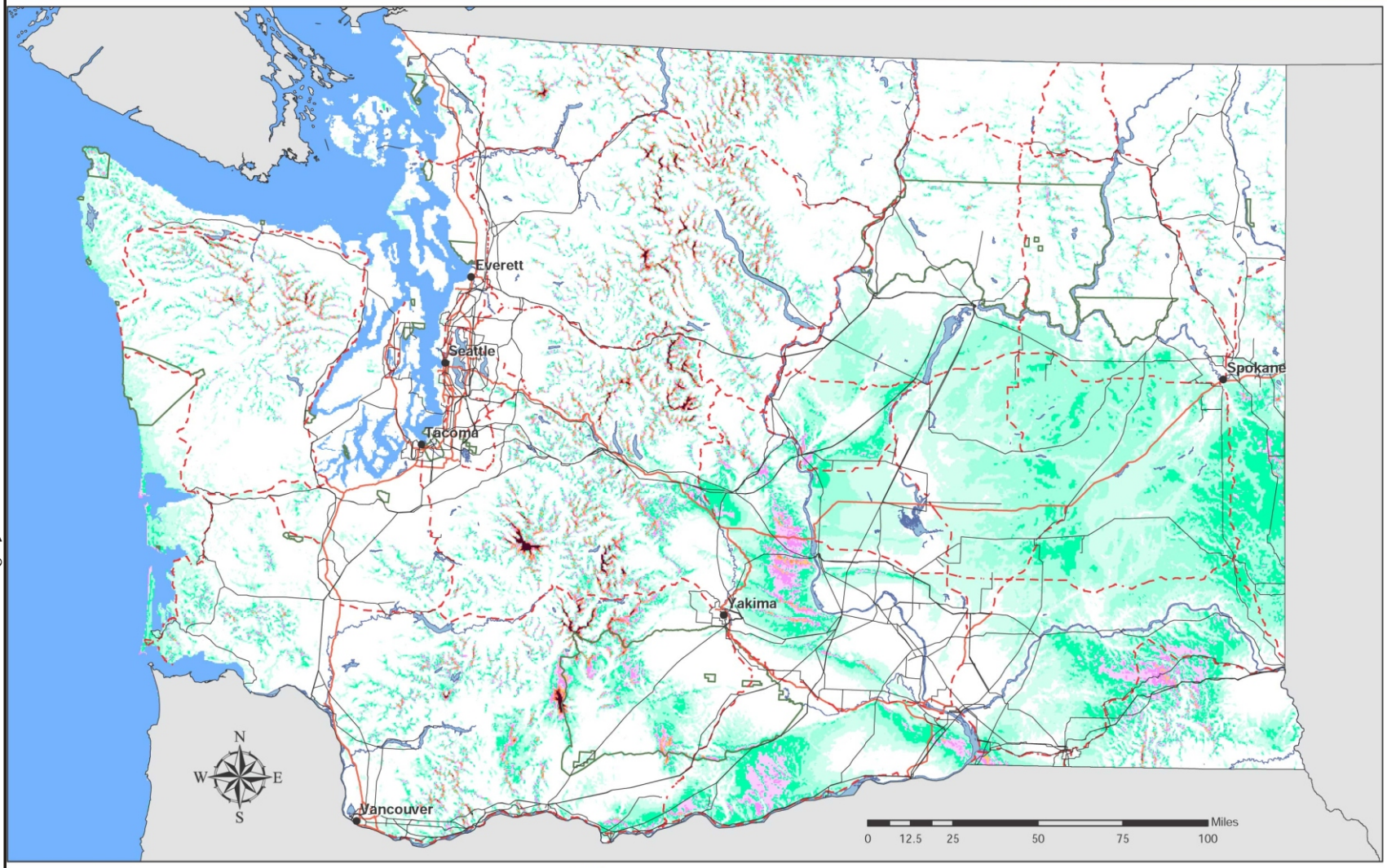
Wind energy facilities must be located in areas with adequate and reliable wind resource, in relative proximity to the regional transmission system, and where compatible with existing land uses and land use plans and regulations. The proposed Project location meets these criteria.

Figure 1-4 identifies wind resources in the State of Washington and indicates a reliable wind resource in the Project Area.

The initial phases of this Project will use an existing Bonneville Power Administration (BPA) 500-kV regional transmission line that transects the northernmost portion of the Project for interconnection. BPA is in the process of planning an expansion of the existing BPA transmission system in order to meet the power transmission needs of this Project as well as the needs of other future

WINDPOWERMAPS.org

Washington State Wind Speed at 50 Meters



Wind Speed at 50 meters

m/s	mph
0 - 5.0	0 - 11.2
5.0 - 5.5	11.2 - 12.3
5.5 - 6.0	12.3 - 13.4
6.0 - 6.5	13.4 - 14.5
6.5 - 7.0	14.5 - 15.7
7.0 - 7.5	15.7 - 16.8
7.5 - 8.0	16.8 - 17.9
8.0 - 8.5	17.9 - 19.0
8.5 - 9.0	19.0 - 20.1
9.0 - 9.5	20.1 - 21.3
9.5 - 10.0	21.3 - 22.4
>10.0	>22.4

- Major Cities
- Transmission Lines > 115 KW
- Limited Access Highway
- Highway
- Tribal Reservations

The wind resource estimates presented on this map were developed by TrueWind Solutions using MesoMap, a mesoscale atmospheric simulation system, at a spatial grid resolution of 400 meters (one-quarter mile). The estimates have been validated by the National Renewable Energy Laboratory (NREL) and independent meteorologist but should be confirmed by direct measurement according to wind energy industry standards.

Northwest Cooperative Development Center | TrueWind Solutions | Bonneville Power Administration | NREL | Northwest SEED | Integral GIS

Project Sponsors

NREL, the Bonneville Power Administration, Northwestern Energy, the Wyoming Business Council, enXco, the Northwest Power Planning Council, Zilkha Renewable Energy, Klickitat County, EnronWind, ABB, Renewable Energy Systems (USA) Inc., Chelan Public Utility District, Idaho Power, Windland, Inc., WSACAA Energy Project, Vestas, Jones & Stokes, CH2M Hill, Suzlon Energy, Northwest Wildlife Consultants, Inc., and Cielo Wind Power.

For more information see www.windpowermaps.org

Figure 1-4
Washington State Wind Resource Map

Lower Snake River Wind Energy Project

Columbia & Garfield Counties
Washington

Note: This page intentionally left blank.

planned projects in the area. There is enough existing capacity to meet the short-term transmission needs of this Project. The Project's long-term transmission needs, however, will be met once the BPA expansion is complete.

Garfield County has declared the agricultural zone as appropriate for wind energy development, and has determined that "[w]ind energy facilities utilize a natural resource – wind – without depleting it, create economic benefits, and are compatible with existing land use policies and goals in the region" (Garfield County Comprehensive Plan 2008). In Garfield County, wind energy facilities are allowed as a conditional use in the agricultural zone, as described in Section 1.03.010 of the Garfield County Zoning Ordinance.

In the Columbia County Comprehensive Plan (2007), wind energy development is encouraged to meet objectives for energy and conservation, as well as business development. The plan states that "energy development that utilizes wind, solar, gas and biofuels shall be encouraged" and that "the County should encourage the development of wind generation projects" (Columbia County 2007). Wind energy facilities are allowed as a conditional use in agricultural (A-1) zones.

1.5 Summary of Proposed Project

1.5.1 Project Overview

The Applicant is proposing to build a commercial wind energy generation facility with approximately 795 turbines and approximately 1,432 MW of installed capacity (the Project). The Project will be constructed in southeastern Washington in Columbia and Garfield counties (see Figures 1-5 and 1-6). Wind turbines will generally be located along ridge tops to use winds that typically come from the southwest. Supporting infrastructure will include access roads, underground and overhead electric collection system lines, substations, transmission lines, microwave communications, meteorological towers, operations and maintenance centers, and temporary construction access and staging areas. The Project will be built in four or more construction phases, with the first phase scheduled to begin construction in 2010. Construction phasing is discussed in more detail in Section 1.5.4.

Energy produced will be interconnected with the Little Goose–Lower Monument #1 and #2 transmission lines. In addition to the Project-specific substations, a new BPA substation (Central Ferry Substation) is proposed in the northern section of the Kuhl Ridge WRA (see Figure 1-9). The environmental impacts associated with the proposed BPA substation site are considered in this EIS. However, BPA will design, construct, and operate this new substation and is responsible for any additional environmental review that may be required for compliance with the National Environmental Policy Act (NEPA). The substation will be designed to accommodate this Project as well as other future regional development, to the extent that it is publicly known, as discussed in Section 2.1 of this document.

1.5.2 Project Area Description

For ease of displaying proposed development plans and evaluating resources, the Project has been divided into four Wind Resource Areas (WRAs) (see Figure 1-7). The WRAs are comprised of predominantly private lands. The indicative layout of environmental permitting corridors includes some lands owned by the Washington Department of Natural Resources (DNR) that are not yet leased but under consideration for leasing. Environmental impacts to these lands are being considered in this EIS.

The WRAs are not distinct Project areas, nor do they directly correlate with proposed construction phases, but are rather sections of the Project separated by natural and human-made features within which development activities such as wind resource evaluation, land lease negotiations, and environmental studies were initiated at different times. Construction will likely occur in four or more phases, and where possible, the Applicant will site supporting infrastructure so that adjacent WRAs share facilities, thereby reducing the total number of facilities constructed within the Project as a whole. Each WRA is described in further detail in Section 1.5.2.1 below.

1.5.2.1 Wind Resource Areas (WRAs)

A detailed description of the WRAs is provided below.

Tucannon WRA

The Tucannon WRA consists of approximately 41,500 acres in Columbia County with approximately 286 turbines to be installed with a capacity of approximately 520 MW (Figure 1-8).

Kuhl Ridge WRA

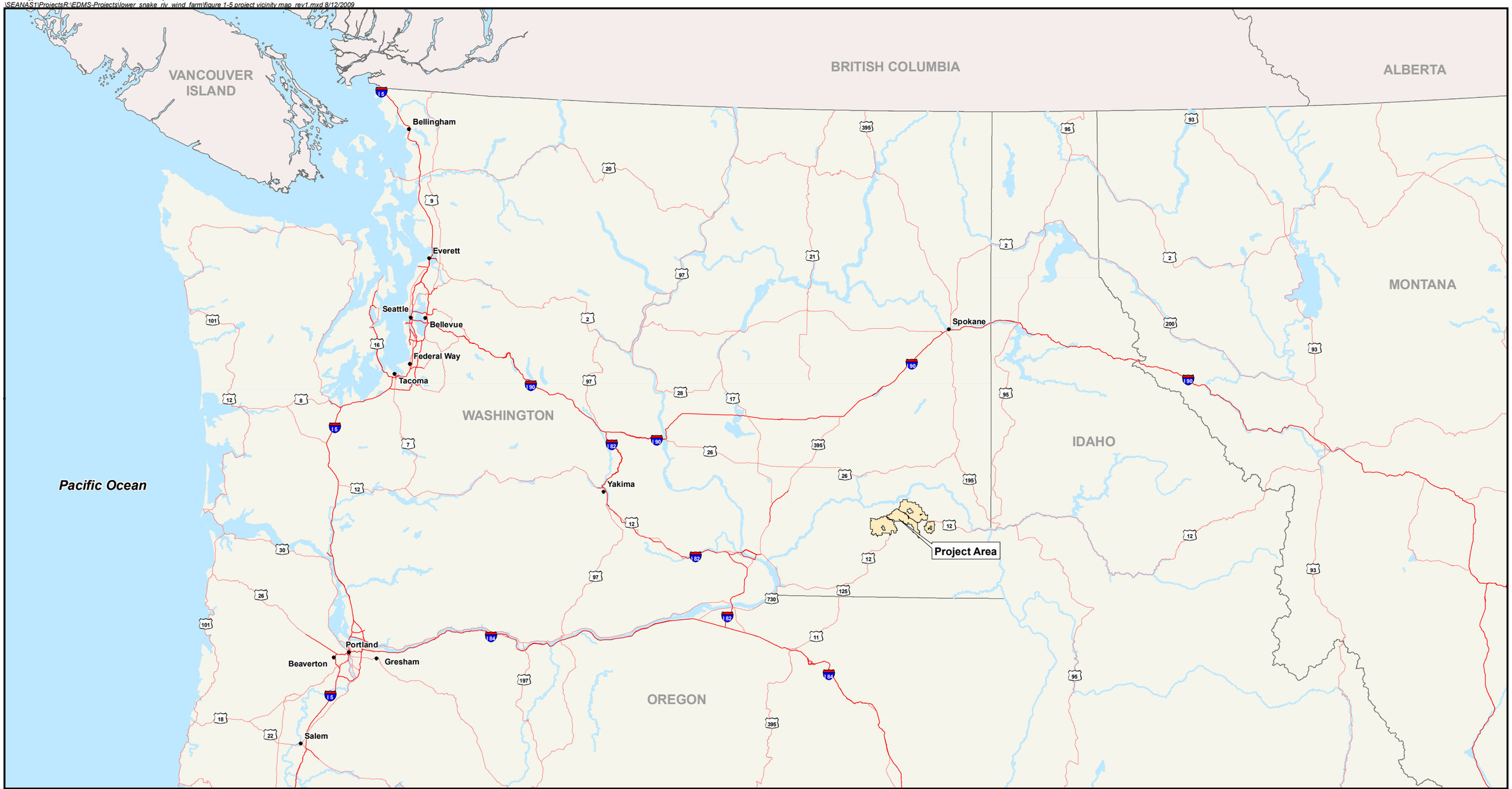
The Kuhl Ridge WRA consists of approximately 39,900 acres in Garfield County with approximately 222 turbines to be installed with a capacity of approximately 400 MW (see Figure 1-9). The Kuhl Ridge WRA also contains the land needed for the BPA substation (Figure 1-9).

Dutch Flats WRA

The Dutch Flats WRA consists of approximately 10,000 acres in Garfield County with approximately 83 turbines to be installed with a capacity of approximately 150 MW (Figure 1-10).

Oliphant WRA

The Oliphant WRA consists of approximately 32,700 acres in Garfield and Columbia counties with approximately 204 turbines (139 in Garfield and 65 in Columbia) to be installed with a capacity of approximately 367 MW (Figure 1-11).



Legend

- City
- Project Area
- Interstate Highway
- U.S., State, and County Highways
- Major Waterways

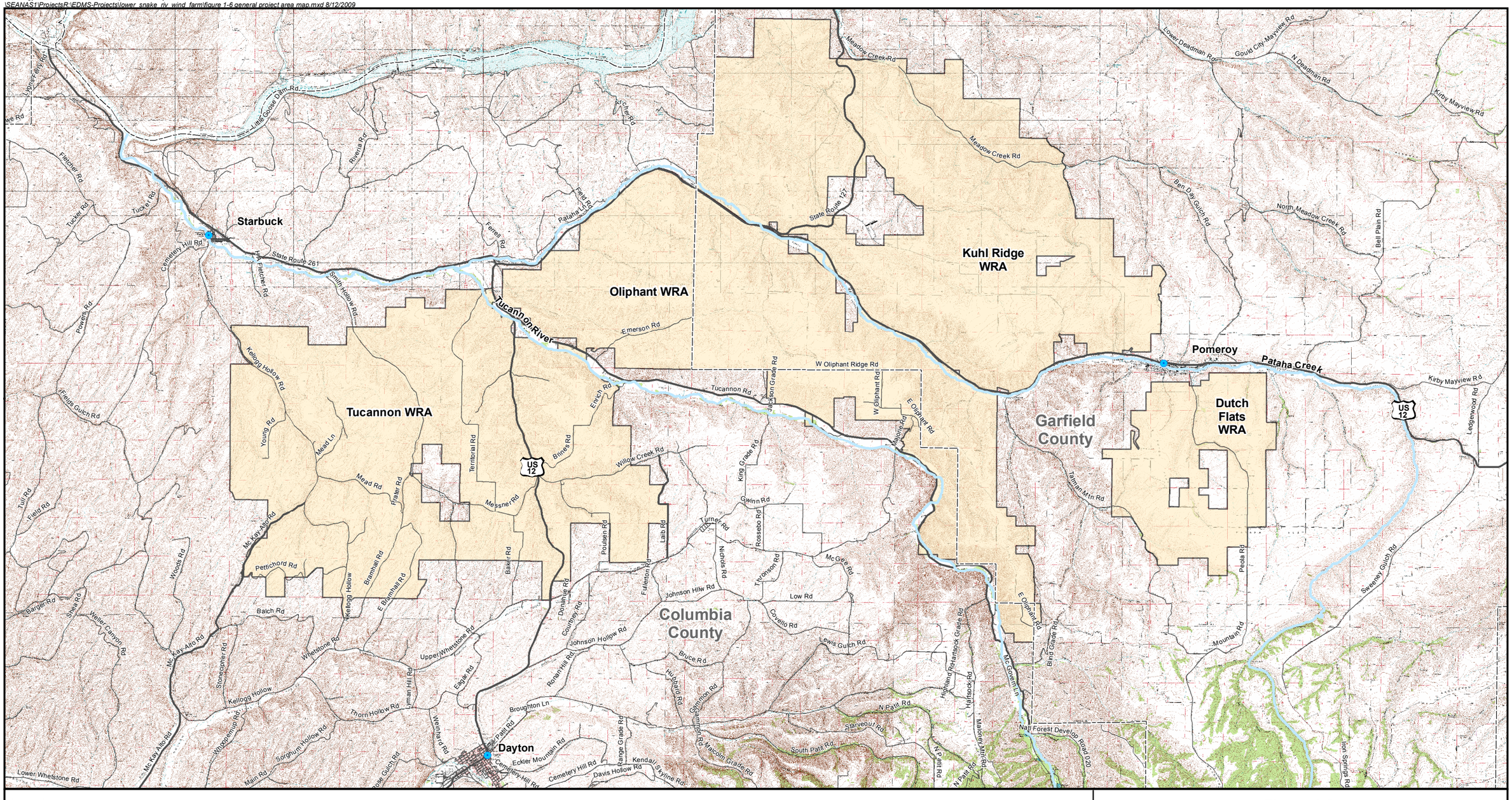
Lower Snake River Wind Energy Project

Columbia & Garfield Counties
Washington

Figure 1-5
Project Vicinity Map

0 25 50 100 150
Miles
Scale 1:2,600,000

Source Information:



Legend

- City
- Existing Roads
- Streams/Rivers
- County Lines
- Project Area

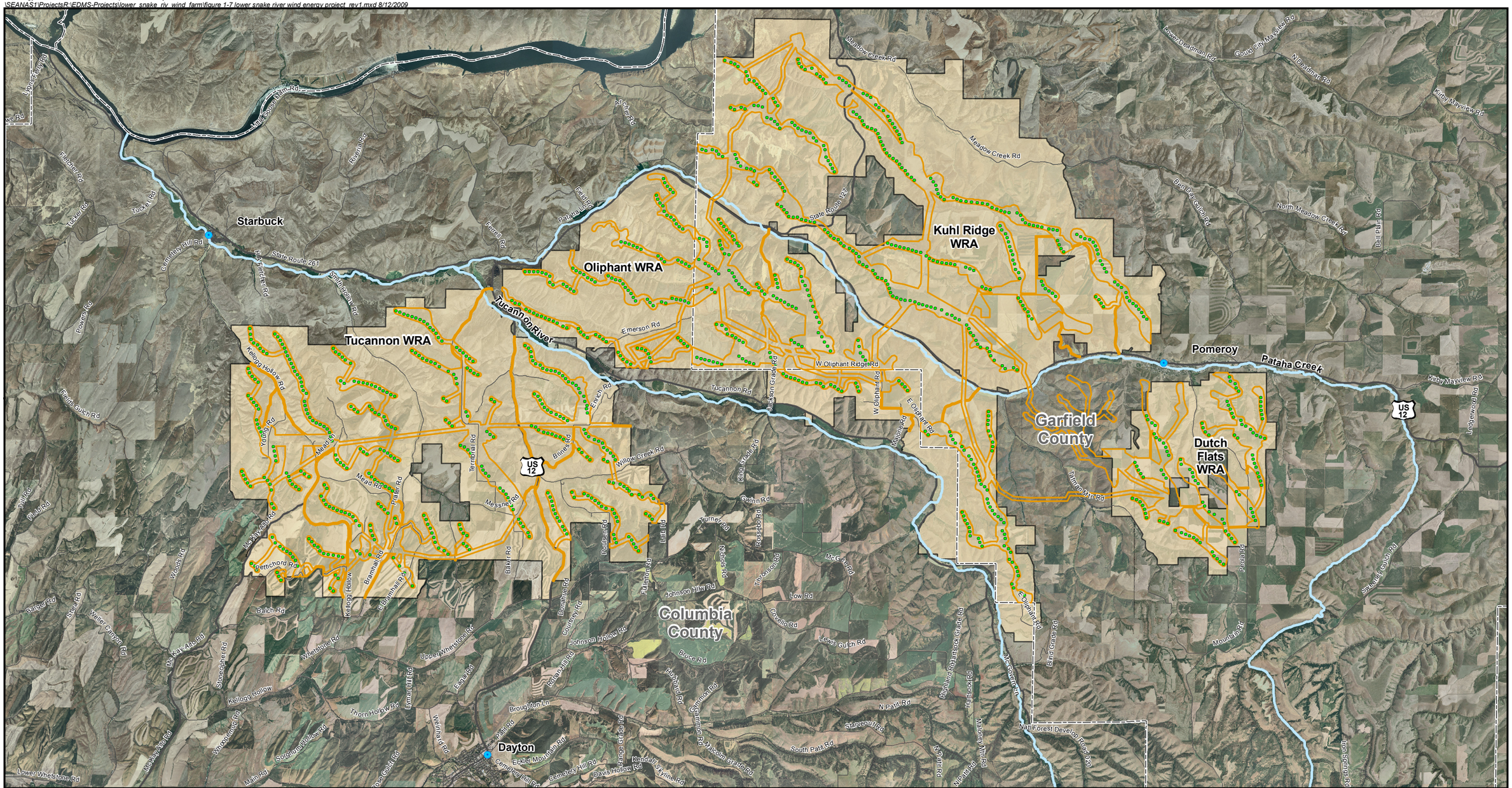
Lower Snake River Wind Energy Project

Columbia & Garfield Counties
Washington

Figure 1-6
General Project Area Map

0 1 2 4 6 8
Scale 1:160,000 Miles

Source Information:



Legend

- Turbine Location
- City
- Existing Roads
- Streams/Rivers
- County Lines
- Project Area
- Permitting Corridor

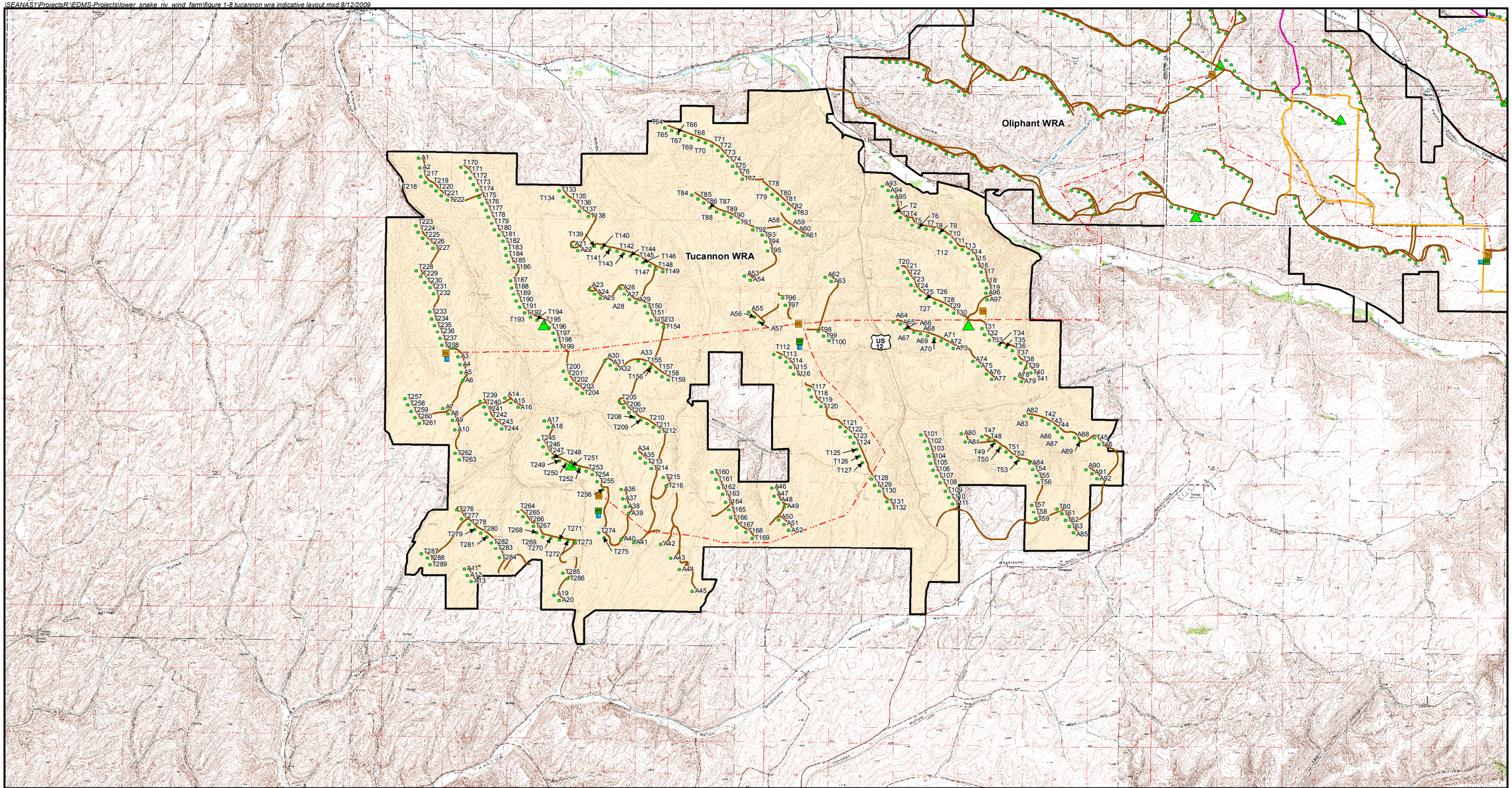
Lower Snake River Wind Energy Project

Columbia & Garfield Counties
Washington

Figure 1-7
Lower Snake River Wind Energy Project

0 1 2 4 6 8
Scale 1:160,000 Miles

Source Information:



Legend

- Turbine Location
- City
- Laydown
- Operations & Maintenance
- Substation
- Met Towners
- County Lines
- 35 kV Transmission Line
- 230 kV Transmission Line
- Existing Roads
- New Roads
- Existing Roads to be Upgraded
- Project Area

Lower Snake River Wind Energy Project

Columbia & Garfield Counties
Washington

Figure 1-8
Tucannon WRA Indicative Layout

0 0.5 1 2 3 4 5
Miles
Scale 1:95,000

Source Information: